

SEQUENCE LISTING

<110> Millennium Pharmaceuticals, Inc.  
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Tomlinson, James E.

<120> METHODS AND COMPOSITIONS FOR TREATING  
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10653, 9235, 21668, 17794, 2210, 6169, 10102, 21061, 17662,  
1468, 12282, 6350, 9035, 1820, 23652, 7301, 8925, 8701,  
3533, 9462, 9123, 12788, 17729, 65552, 1261, 21476, 33770,  
9380, 2569654, 33556, 53656, 44143, 32612, 10671, 261,  
44570, 41922, 2552, 2417, 19319, 43969, 8921, 8993, 955,  
32345, 966, 1920, 17318, 1510, 14180, 26005, 554, 16408,  
42028, 112091, 13886, 13942, 1673, 54946 OR 2419

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ttttccgtct gggctctcgg agaaagaagc tcctgggtca gcggctgcaa aactttcctg 180
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 Thr His Leu Ile Asn Pro Ser Ala Ser His Ser Asp Thr Pro Glu Thr 895

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Thr	Leu	Ser	His	Pro	Trp	Leu	Gln	Asp	Tyr	Gln	Thr	Trp	Leu	Asp	Leu		
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Arg	Glu	Leu	Glu	Cys	Lys	Ile	Gly	Glu	Arg	Tyr	Ile	Thr	His	Glu	Ser		
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                   45                  50                  55                  60

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 Ala Pro His Met His Ala Tyr Ala Leu Glu Leu Leu Phe Asp Gln Leu  
                   65                  70                  75

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 His Glu Gly Ala Lys Ala Leu Asp Val Gly Ser Gly Ser Gly Ile Leu  
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act gca tgt ttt gca cgt atg gtt gga tgt act gga aaa gtc ata gga 397  
 Thr Ala Cys Phe Ala Arg Met Val Gly Cys Thr Gly Lys Val Ile Gly  
                   95                  100                  105

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 Ile Asp His Ile Lys Glu Leu Val Asp Asp Ser Val Asn Asn Val Arg  
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 Lys Asp Asp Pro Thr Leu Leu Ser Ser Gly Arg Val Gln Leu Val Val  
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ggg gat gga aga atg gga tat gct gaa gaa gcc cct tat gat gcc att 541  
 Gly Asp Gly Arg Met Gly Tyr Ala Glu Glu Ala Pro Tyr Asp Ala Ile  
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cat gtg gga gct gca gcc cct gtt gta ccc cag gcg cta ata gat cag 589  
 His Val Gly Ala Ala Ala Pro Val Val Pro Gln Ala Leu Ile Asp Gln  
 160 165 170

tta aag ccc gga gga aga ttg ata ttg cct gtt ggt cct gca ggc gga 637  
 Leu Lys Pro Gly Gly Arg Leu Ile Leu Pro Val Gly Pro Ala Gly Gly  
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aac caa atg ttg gag cag tat gac aag cta caa gat ggc agc atc aaa 685  
 Asn Gln Met Leu Glu Gln Tyr Asp Lys Leu Gln Asp Gly Ser Ile Lys  
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 Met Lys Pro Leu Met Gly Val Ile Tyr Val Pro Leu Thr Asp Lys Glu  
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 Lys Gln Trp Ser Arg Trp Lys \*  
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 Ser Pro Gln Ser Ile Gly Phe Gln Ala Thr Ile Ser Ala Pro His Met  
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His Ala Tyr Ala Leu Glu Leu Leu Phe Asp Gln Leu His Glu Gly Ala  
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 Gly Arg Leu Ile Leu Pro Val Gly Pro Ala Gly Gly Asn Gln Met Leu  
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 Leu Phe Cys Ile Gly Met Gly Phe Ile Cys Gly Phe Ser Ile Ala Thr  
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 Gly Ala Ala Ala Arg Leu Val Ser Gly Tyr Asp Ser Tyr Gly Asn Ile  
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 Cys Gly Gln Lys Asn Thr Lys Leu Glu Ala Ile Pro Asn Ser Gly Met  
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 Asp His Thr Gln Arg Lys Tyr Val Phe Phe Leu Asp Pro Cys Asn Leu  
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Cys Pro Arg Gln Glu Leu Lys Thr Leu Ser Asp Val Gln Lys Phe Ala	
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Glu Ile Asn Gly Ser Ala Leu Cys Ser Tyr Asn Leu Lys Pro Ser Glu	
135 140 145	
tac act aca tct cca aaa tct tct gtt ctc tgc ccc aaa cta cca gtt	534
Tyr Thr Thr Ser Pro Lys Ser Ser Val Leu Cys Pro Lys Leu Pro Val	
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cca gcg agt gca cct att cca ttc ttc cat cgc tgt gct cct gtg aac	582
Pro Ala Ser Ala Pro Ile Pro Phe Phe His Arg Cys Ala Pro Val Asn	
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Ile Ser Cys Tyr Ala Lys Phe Ala Glu Ala Leu Ile Thr Phe Val Ser	
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215 220 225	
ttg atg gtg ata atc agg tat ata tca aga gta ctt gtg tgg atc tta	774
Leu Met Val Ile Ile Arg Tyr Ile Ser Arg Val Leu Val Trp Ile Leu	
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Glu Gln Leu Gln Ile Ala Glu Asp Asn Leu Arg Ala Leu Leu Ile Tyr	
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Ala Ile Ser Ala Thr Val Phe Thr Val Ile Leu Phe Leu Ile Met Leu	
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Val Met Arg Lys Arg Val Ala Leu Thr Ile Ala Leu Phe His Val Ala	
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Gly Lys Val Phe Ile His Leu Pro Leu Leu Val Phe Gln Pro Phe Trp	
325 330 335 340	
act ttc ttt gct ctt gtc ttg ttt tgg gtg tac tgg atc atg aca ctt	1110
Thr Phe Phe Ala Leu Val Leu Phe Trp Val Tyr Trp Ile Met Thr Leu	

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Val	Glu	Phe	Lys	Ile	Ser	Gly	Pro	Leu	Gln	Tyr	Met	Trp	Trp	Tyr	His					
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gtg	gtg	ggc	ctg	att	tgg	atc	agt	gaa	ttt	att	cta	gca	tgt	cag	cag	1254				
Val	Val	Gly	Leu	Ile	Trp	Ile	Ser	Glu	Phe	Ile	Leu	Ala	Cys	Gln	Gln					
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Arg	Asn	Leu	Pro	Phe	Thr	Pro	Ile	Leu	Ala	Ser	Val	Asn	Arg	Leu	Ile					
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cgt	tac	cac	cta	ggg	acg	gtg	gca	aaa	gga	tct	ttc	att	atc	aca	tta	1398				
Arg	Tyr	His	Leu	Gly	Thr	Val	Ala	Lys	Gly	Ser	Phe	Ile	Ile	Thr	Leu					
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gtc	aaa	att	ccg	cga	atg	atc	ctt	atg	tat	att	cac	agt	cag	ctc	aaa	1446				
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		455					460					465								
gga	aag	gaa	aat	gct	tgt	gca	cga	tgt	gtg	ctg	aaa	tct	tgc	att	tgt	1494				
Gly	Lys	Glu	Asn	Ala	Cys	Ala	Arg	Cys	Val	Leu	Lys	Ser	Cys	Ile	Cys					
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Cys	Leu	Trp	Cys	Leu	Glu	Lys	Cys	Leu	Asn	Tyr	Leu	Asn	Gln	Asn	Ala					
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Tyr	Thr	Ala	Thr	Ala	Ile	Asn	Ser	Thr	Asn	Phe	Cys	Thr	Ser	Ala	Lys					
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gat	gcc	ttt	gtc	att	ctg	gtg	gag	aat	gct	ttg	cga	gtg	gct	acc	atc	1638				
Asp	Ala	Phe	Val	Ile	Leu	Val	Glu	Asn	Ala	Leu	Arg	Val	Ala	Thr	Ile					
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tgc	agc	aca	ggg	tta	gct	ggg	att	atg	ctg	ctc	aac	tac	cag	cag	gac	1734				
Cys	Ser	Thr	Gly	Leu	Ala	Gly	Ile	Met	Leu	Leu	Asn	Tyr	Gln	Gln	Asp					
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Tyr	Thr	Val	Trp	Val	Leu	Pro	Leu	Ile	Ile	Val	Cys	Leu	Phe	Ala	Phe					
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Leu	Val	Ala	His	Cys	Phe	Leu	Ser	Ile	Tyr	Glu	Met	Val	Val	Asp	Val					
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ggc aga gaa ttc tat atg gat aaa gtg ctg atg gag ttt gtg gaa aac	1926
Gly Arg Glu Phe Tyr Met Asp Lys Val Leu Met Glu Phe Val Glu Asn	
615 620 625	
agt agg aaa gca atg aaa gaa gct ggt aag gga ggc gtc gct gat tcc	1974
Ser Arg Lys Ala Met Lys Glu Ala Gly Lys Gly Gly Val Ala Asp Ser	
630 635 640	
aga gag cta aag ccg atg gct tcg gga gca agt tct gct tga	2016
Arg Glu Leu Lys Pro Met Ala Ser Gly Ala Ser Ser Ala *	
645 650 655	

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225					230					235					240
Val	Trp	Ile	Leu	Thr	Ile	Leu	Val	Ile	Leu	Gly	Ser	Leu	Gly	Gly	Thr
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Phe	His	Val	Ala	Gly	Lys	Val	Phe	Ile	His	Leu	Pro	Leu	Leu	Val	Phe
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Ile	Ile	Thr	Leu	Val	Lys	Ile	Pro	Arg	Met	Ile	Leu	Met	Tyr	Ile	His
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Ser	Gln	Leu	Lys	Gly	Lys	Glu	Asn	Ala	Cys	Ala	Arg	Cys	Val	Leu	Lys
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Ser	Cys	Ile	Cys	Cys	Leu	Trp	Cys	Leu	Glu	Lys	Cys	Leu	Asn	Tyr	Leu
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Asn	Gln	Asn	Ala	Tyr	Thr	Ala	Thr	Ala	Ile	Asn	Ser	Thr	Asn	Phe	Cys	
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Tyr	Gln	Gln	Asp	Tyr	Thr	Val	Trp	Val	Leu	Pro	Leu	Ile	Ile	Val	Cys	
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Leu	Phe	Ala	Phe	Leu	Val	Ala	His	Cys	Phe	Leu	Ser	Ile	Tyr	Glu	Met	
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Val	Val	Asp	Val	Leu	Phe	Leu	Cys	Phe	Ala	Ile	Asp	Thr	Lys	Tyr	Asn	
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Asp	Gly	Ser	Pro	Gly	Arg	Glu	Phe	Tyr	Met	Asp	Lys	Val	Leu	Met	Glu	
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Phe	Val	Glu	Asn	Ser	Arg	Lys	Ala	Met	Lys	Glu	Ala	Gly	Lys	Gly	Gly	
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 Glu Phe Phe Pro Ile Ala Asp Gly Asp Gln Gln Ser Pro Ile Glu Ile  
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 Lys Thr Lys Glu Val Lys Tyr Asp Ser Ser Leu Arg Pro Leu Ser Ile  
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 Lys Tyr Asp Pro Ser Ser Ala Lys Ile Ile Ser Asn Ser Gly His Ser  
 55 60 65

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 Phe Asn Val Asp Phe Asp Asp Thr Glu Asn Lys Ser Val Leu Arg Gly  
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 Gly Pro Leu Thr Gly Ser Tyr Arg Leu Arg Gln Val His Leu His Trp  
 85 90 95

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 Gly Ser Ala Asp Asp His Gly Ser Glu His Ile Val Asp Gly Val Ser  
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 Tyr Ala Ala Glu Leu His Val Val His Trp Asn Ser Asp Lys Tyr Pro  
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 Ser Phe Val Glu Ala Ala His Glu Pro Asp Gly Leu Ala Val Leu Gly  
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 Val Phe Leu Gln Ile Gly Glu Pro Asn Ser Gln Leu Gln Lys Ile Thr  
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 Asp Thr Leu Asp Ser Ile Lys Glu Lys Gly Lys Gln Thr Arg Phe Thr  
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 Val Ser Asn His Arg Pro Pro Gln Pro Leu Lys Gly Arg Lys Val Arg  
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 Ala Ser Phe His \*  
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<213> Homo Sapiens

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Glu Ile Lys Thr Lys Glu Val Lys Tyr Asp Ser Ser Leu Arg Pro Leu
35          40          45
Ser Ile Lys Tyr Asp Pro Ser Ser Ala Lys Ile Ile Ser Asn Ser Gly
50          55          60
His Ser Phe Asn Val Asp Phe Asp Asp Thr Glu Asn Lys Ser Val Leu
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Arg Gly Gly Pro Leu Thr Gly Ser Tyr Arg Leu Arg Gln Val His Leu
85          90          95
His Trp Gly Ser Ala Asp Asp His Gly Ser Glu His Ile Val Asp Gly
100         105         110
Val Ser Tyr Ala Ala Glu Leu His Val Val His Trp Asn Ser Asp Lys
115         120         125
Tyr Pro Ser Phe Val Glu Ala Ala His Glu Pro Asp Gly Leu Ala Val
130         135         140
Leu Gly Val Phe Leu Gln Ile Gly Glu Pro Asn Ser Gln Leu Gln Lys
145         150         155         160
Ile Thr Asp Thr Leu Asp Ser Ile Lys Glu Lys Gly Lys Gln Thr Arg
165         170         175
Phe Thr Asn Phe Asp Leu Leu Ser Leu Leu Pro Pro Ser Trp Asp Tyr
180         185         190
Trp Thr Tyr Pro Gly Ser Leu Thr Val Pro Pro Leu Leu Glu Ser Val
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Thr Trp Ile Val Leu Lys Gln Pro Ile Asn Ile Ser Ser Gln Gln Leu
210         215         220

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 Met Glu Ser Tyr His Lys Pro Asp Gln Gln Lys Leu Gln  
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 Ala Leu Lys Asp Thr Ala Asn Arg Leu Arg Ile Ser Ser Ile Gln Ala  
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 Ser Ser Ala Ala Gly Ser Gly His Pro Thr Ser Cys Cys Ser Ala Ala  
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 Val Ile Met Ala Val Leu Phe Phe His Thr Met Arg Tyr Lys Ser Gln  
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 Asp Pro Arg Asn Pro His Asn Asp Arg Phe Val Leu Ser Lys Gly His  
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 Ala Ala Pro Ile Leu Tyr Ala Val Trp Ala Glu Ala Gly Phe Leu Ala  
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 Phe Asp Lys Ala Ser Tyr Arg Val Tyr Cys Leu Leu Gly Asp Gly Glu  
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Lys Leu Asp Asn Leu Val Ala Ile Leu Asp Ile Asn Arg Leu Gly Gln	
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Ser Asp Pro Ala Pro Leu Gln His Gln Met Asp Ile Tyr Gln Lys Arg	
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Cys Glu Ala Phe Gly Trp His Ala Ile Ile Val Asp Gly His Ser Val	
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Glu Glu Leu Cys Lys Ala Phe Gly Gln Ala Lys His Gln Pro Thr Ala	
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Ile Ile Ala Lys Thr Phe Lys Gly Arg Gly Ile Thr Gly Val Glu Asp	
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Lys Glu Ser Trp His Gly Lys Pro Leu Pro Lys Asn Met Ala Glu Gln	
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Ile Ile Gln Glu Ile Tyr Ser Gln Ile Gln Ser Lys Lys Lys Ile Leu	
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Ala Thr Pro Pro Gln Glu Asp Ala Pro Ser Val Asp Ile Ala Asn Ile	
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Arg Met Pro Ser Leu Pro Ser Tyr Lys Val Gly Asp Lys Ile Ala Thr	
305 310 315	
cgc aag gcc tac ggg cag gca ctg gcc aag ctg ggc cat gcc agt gac	1069
Arg Lys Ala Tyr Gly Gln Ala Leu Ala Lys Leu Gly His Ala Ser Asp	
320 325 330	
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Arg Ile Ile Ala Leu Asp Gly Asp Thr Lys Asn Ser Thr Phe Ser Glu	
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Thr Val Pro Phe Cys Ser Thr Phe Ala Ala Phe Phe Thr Arg Ala Phe	
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Lys	Ala	*														
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<213> Homo Sapiens

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Ile	Leu	Tyr	Ala	Val	Trp	Ala	Glu	Ala	Gly	Phe	Leu	Ala	Glu	Ala	Glu
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Pro	Gln	Glu	Asp	Ala	Pro	Ser	Val	Asp	Ile	Ala	Asn	Ile	Arg	Met	Pro
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Ser	Leu	Pro	Ser	Tyr	Lys	Val	Gly	Asp	Lys	Ile	Ala	Thr	Arg	Lys	Ala
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Tyr	Gly	Gln	Ala	Leu	Ala	Lys	Leu	Gly	His	Ala	Ser	Asp	Arg	Ile	Ile
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Arg	Met	Ala	Ala	Ile	Ser	Glu	Ser	Asn	Ile	Asn	Leu	Cys	Gly	Ser	His
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Cys	Gly	Val	Ser	Ile	Gly	Glu	Asp	Gly	Ala	Ser	Gln	Met	Ala	Leu	Glu
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Asp	Leu	Ala	Met	Phe	Arg	Ser	Val	Pro	Thr	Ser	Thr	Val	Phe	Tyr	Pro
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Ser	Asp	Gly	Val	Ala	Thr	Glu	Lys	Ala	Val	Glu	Leu	Ala	Ala	Asn	Thr
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465		470		475		480
Tyr Asn Asn Asn Glu Asp Phe Gln Val Gly Gln Ala Lys Val Val Leu						
	485		490		495	
Lys Ser Lys Asp Asp Gln Val Thr Val Ile Gly Ala Gly Val Thr Leu						
	500		505		510	
His Glu Ala Leu Ala Ala Ala Glu Leu Leu Lys Lys Glu Lys Ile Asn						
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Ile Arg Val Leu Asp Pro Phe Thr Ile Lys Pro Leu Asp Arg Lys Leu						
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Ile Leu Asp Ser Ala Arg Ala Thr Lys Gly Arg Ile Leu Thr Val Glu						
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Asp His Tyr Tyr Glu Gly Gly Ile Gly Glu Ala Val Ser Ser Ala Val						
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Val Gly Glu Pro Gly Ile Thr Val Thr His Leu Ala Val Asn Arg Val						
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Pro Arg Ser Gly Lys Pro Ala Glu Leu Leu Lys Met Phe Gly Ile Asp						
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 tc atg tgt ggt ata ttt gct tac tta aac tac cat gtt cct cga acg 167  
 Met Cys Gly Ile Phe Ala Tyr Leu Asn Tyr His Val Pro Arg Thr  
 1 5 10 15

aga cga gaa atc ctg gag acc cta atc aaa ggc ctt cag aga ctg gag 215  
 Arg Arg Glu Ile Leu Glu Thr Leu Ile Lys Gly Leu Gln Arg Leu Glu  
 20 25 30

tac aga gga tat gat tct gct ggt gtg gga ttt gat gga ggc aat gat 263  
 Tyr Arg Gly Tyr Asp Ser Ala Gly Val Gly Phe Asp Gly Gly Asn Asp  
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aaa gat tgg gaa gcc aat gcc tgc aaa acc cag ctt att aag aag aaa 311  
 Lys Asp Trp Glu Ala Asn Ala Cys Lys Thr Gln Leu Ile Lys Lys Lys  
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gga aaa gtt aag gca ctg gat gaa gaa gtt cac aag caa caa gat atg 359  
 Gly Lys Val Lys Ala Leu Asp Glu Glu Val His Lys Gln Gln Asp Met  
 65 70 75

gat ttg gat ata gaa ttt gat gta cac ctt gga ata gct cat acc cgt 407  
 Asp Leu Asp Ile Glu Phe Asp Val His Leu Gly Ile Ala His Thr Arg  
 80 85 90 95

tgg gca aca cat gga gaa ccc agt cct gtc aat agc cac ccc cag cgc 455  
 Trp Ala Thr His Gly Glu Pro Ser Pro Val Asn Ser His Pro Gln Arg  
 100 105 110

tct gat aaa aat aat gaa ttt atc gtt att cac aat gga atc atc acc 503

Ser	Asp	Lys	Asn	Asn	Glu	Phe	Ile	Val	Ile	His	Asn	Gly	Ile	Ile	Thr		
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Asn	Tyr	Lys	Asp	Leu	Lys	Lys	Phe	Leu	Glu	Ser	Lys	Gly	Tyr	Asp	Phe		
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gaa	tct	gaa	aca	gac	aca	gag	aca	att	gcc	aag	ctc	ggt	aag	tat	atg	599	
Glu	Ser	Glu	Thr	Asp	Thr	Glu	Thr	Ile	Ala	Lys	Leu	Val	Lys	Tyr	Met		
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tat	gac	aat	cgg	gaa	agt	caa	gat	acc	agc	ttt	act	acc	ttg	gtg	gag	647	
Tyr	Asp	Asn	Arg	Glu	Ser	Gln	Asp	Thr	Ser	Phe	Thr	Thr	Leu	Val	Glu		
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aga	gtt	atc	caa	caa	ttg	gaa	ggt	gct	ttt	gca	ctt	gtg	ttt	aaa	agt	695	
Arg	Val	Ile	Gln	Gln	Leu	Glu	Gly	Ala	Phe	Ala	Leu	Val	Phe	Lys	Ser		
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gtt	cat	ttt	ccc	ggg	caa	gca	gtt	ggc	aca	agg	cga	ggt	agc	cct	ctg	743	
Val	His	Phe	Pro	Gly	Gln	Ala	Val	Gly	Thr	Arg	Arg	Gly	Ser	Pro	Leu		
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Leu	Ile	Gly	Val	Arg	Ser	Glu	His	Lys	Leu	Ser	Thr	Asp	His	Ile	Pro		
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Ile	Leu	Tyr	Arg	Thr	Gly	Lys	Asp	Lys	Lys	Gly	Ser	Cys	Asn	Leu	Ser		
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cgt	gtg	gac	agc	aca	acc	tgc	ctt	ttc	ccg	gtg	gaa	gaa	aaa	gca	gtg	887	
Arg	Val	Asp	Ser	Thr	Thr	Cys	Leu	Phe	Pro	Val	Glu	Glu	Lys	Ala	Val		
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gag	tat	tac	ttt	gct	tct	gat	gca	agt	gct	gtc	ata	gaa	cac	acc	aat	935	
Glu	Tyr	Tyr	Phe	Ala	Ser	Asp	Ala	Ser	Ala	Val	Ile	Glu	His	Thr	Asn		
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cgc	gtc	atc	ttt	ctg	gaa	gat	gat	gat	gtt	gca	gca	gta	gtg	gat	gga	983	
Arg	Val	Ile	Phe	Leu	Glu	Asp	Asp	Asp	Val	Ala	Ala	Val	Val	Asp	Gly		
			275					280					285				
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Arg	Leu	Ser	Ile	His	Arg	Ile	Lys	Arg	Thr	Ala	Gly	Asp	His	Pro	Gly		
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Val	Val	Asn	Thr	Met	Arg	Gly	Arg	Val	Asn	Phe	Asp	Asp	Tyr	Thr	Val		
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aat	ttg	ggt	ggt	ttg	aag	gat	cac	ata	aag	gag	atc	cag	aga	tgc	cgg	1223	
Asn	Leu	Gly	Gly	Leu	Lys	Asp	His	Ile	Lys	Glu	Ile	Gln	Arg	Cys	Arg		
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Arg Leu Ile Leu Ile Ala Cys Gly Thr Ser Tyr His Ala Gly Val Ala	
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Thr Arg Gln Val Leu Glu Glu Leu Thr Glu Leu Pro Val Met Val Glu	
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cta gca agt gac ttc ctg gac aga aac aca cca gtc ttt cga gat gat	1367
Leu Ala Ser Asp Phe Leu Asp Arg Asn Thr Pro Val Phe Arg Asp Asp	
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Val Cys Phe Phe Leu Ser Gln Ser Gly Glu Thr Ala Asp Thr Leu Met	
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Gly Leu Arg Tyr Cys Lys Glu Arg Gly Ala Leu Thr Val Gly Ile Thr	
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Asn Thr Val Gly Ser Ser Ile Ser Arg Glu Thr Asp Cys Gly Val His	
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Ile Asn Ala Gly Pro Glu Ile Gly Val Ala Ser Thr Lys Ala Tyr Thr	
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Ser Gln Phe Val Ser Leu Val Met Phe Ala Leu Met Met Cys Asp Asp	
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Arg Ile Ser Met Gln Glu Arg Arg Lys Glu Ile Met Leu Gly Leu Lys	
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cgg ctg cct gat ttg att aag gaa gta ctg agc atg gat gac gaa att	1703
Arg Leu Pro Asp Leu Ile Lys Glu Val Leu Ser Met Asp Asp Glu Ile	
515 520 525	
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Gln Lys Leu Ala Thr Glu Leu Tyr His Gln Lys Ser Val Leu Ile Met	
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Gly Arg Gly Tyr His Tyr Ala Thr Cys Leu Glu Gly Ala Leu Lys Ile	
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Lys Glu Ile Thr Tyr Met His Ser Glu Gly Ile Leu Ala Gly Glu Leu	
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Lys His Gly Pro Leu Ala Leu Val Asp Lys Leu Met Pro Val Ile Met	
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Ile Ile Met Arg Asp His Thr Tyr Ala Lys Cys Gln Asn Ala Leu Gln	
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Gln	Val	Val	Ala	Arg	Gln	Gly	Arg	Pro	Val	Val	Ile	Cys	Asp	Lys	Glu		
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Asp	Thr	Glu	Thr	Ile	Lys	Asn	Thr	Lys	Arg	Thr	Ile	Lys	Val	Pro	His		
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Ser	Val	Asp	Cys	Leu	Gln	Gly	Ile	Leu	Ser	Val	Ile	Pro	Leu	Gln	Leu		
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cgg	aat	ctt	gcc	aaa	tct	gtg	act	gta	gag	tga	ggaatatcta	tacaaaatgt	2188				
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			675					680									
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Arg	Gly	Tyr	Asp	Ser	Ala	Gly	Val	Gly	Phe	Asp	Gly	Gly	Asn	Asp	Lys		
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Asp	Trp	Glu	Ala	Asn	Ala	Cys	Lys	Thr	Gln	Leu	Ile	Lys	Lys	Lys	Gly		
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Lys	Val	Lys	Ala	Leu	Asp	Glu	Glu	Val	His	Lys	Gln	Gln	Asp	Met	Asp		
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Leu	Asp	Ile	Glu	Phe	Asp	Val	His	Leu	Gly	Ile	Ala	His	Thr	Arg	Trp		
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Ala	Thr	His	Gly	Glu	Pro	Ser	Pro	Val	Asn	Ser	His	Pro	Gln	Arg	Ser		
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Asp	Lys	Asn	Asn	Glu	Phe	Ile	Val	Ile	His	Asn	Gly	Ile	Ile	Thr	Asn		
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Tyr	Lys	Asp	Leu	Lys	Lys	Phe	Leu	Glu	Ser	Lys	Gly	Tyr	Asp	Phe	Glu		
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Ser	Glu	Thr	Asp	Thr	Glu	Thr	Ile	Ala	Lys	Leu	Val	Lys	Tyr	Met	Tyr		
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670

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gct ttg aac agg aac ttc aac cag cag ggt ctc tat tcc aat gtg gcc 674
Ala Leu Asn Arg Asn Phe Asn Gln Gln Gly Leu Tyr Ser Asn Val Ala
210 215 220

tgt cca ggt aca gca ttg acc aat ttg aca tat gga att ctg cct ccg 722
Cys Pro Gly Thr Ala Leu Thr Asn Leu Thr Tyr Gly Ile Leu Pro Pro
225 230 235

ttt ata tgg acg ctg ttg atg ccg gca ata ttg cta ctt cgc ttt ttt 770
Phe Ile Trp Thr Leu Leu Met Pro Ala Ile Leu Leu Leu Arg Phe Phe
240 245 250

gca aat gca ttc act ttg aca cca tat aat gga aca gaa gct ctg gta 818
Ala Asn Ala Phe Thr Leu Thr Pro Tyr Asn Gly Thr Glu Ala Leu Val
255 260 265

tgg ctt ttc cac caa aag cct gaa tct ctc aat cct ctg atc aaa tat 866
Trp Leu Phe His Gln Lys Pro Glu Ser Leu Asn Pro Leu Ile Lys Tyr
270 275 280 285

ctg agt gcc acc act ggc ttt gga aga aat tat att atg acc cag aag 914
Leu Ser Ala Thr Thr Gly Phe Gly Arg Asn Tyr Ile Met Thr Gln Lys
290 295 300

atg gac cta gat gaa gac act gct gaa aaa ttt tat caa aag tta ctg 962
Met Asp Leu Asp Glu Asp Thr Ala Glu Lys Phe Tyr Gln Lys Leu Leu
305 310 315

gaa ctg gaa aag cac att agg gtc act att caa aaa aca gat aat cag 1010
Glu Leu Glu Lys His Ile Arg Val Thr Ile Gln Lys Thr Asp Asn Gln
320 325 330

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Ala Arg Leu Ser Gly Ser Cys Leu *
335 340

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35 40 45
Leu Ala Ser His Pro Thr Ala Glu Val Thr Ile Val Gln Val Asp Val

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Lys	Thr	Ser	Tyr	Met	Phe	Leu	Arg	Lys	Glu	Leu	Pro	Val	Arg	Leu	Ala	
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Asn	Thr	Met	Arg	Glu	Val	Asn	Leu	Leu	Pro	Asp	Asn	Leu	Leu	Asn	Arg	
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cct	tca	gtg	gga	ttg	gtt	cag	agt	tgg	tat	atg	cag	agt	ttt	ctt	gaa	292
Pro	Ser	Val	Gly	Leu	Val	Gln	Ser	Trp	Tyr	Met	Gln	Ser	Phe	Leu	Glu	
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ctt	tta	gaa	tat	gaa	aat	aag	agc	cct	gag	gat	cca	cag	gtc	ttg	gat	340
Leu	Leu	Glu	Tyr	Glu	Asn	Lys	Ser	Pro	Glu	Asp	Pro	Gln	Val	Leu	Asp	
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Asn	Phe	Leu	Gln	Val	Leu	Ile	Lys	Val	Arg	Asn	Arg	His	Asn	Asp	Val	
			110					115					120			
gtt	cct	aca	atg	gca	caa	gga	gtg	att	gaa	tac	aag	gag	aag	ttt	ggg	436
Val	Pro	Thr	Met	Ala	Gln	Gly	Val	Ile	Glu	Tyr	Lys	Glu	Lys	Phe	Gly	
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Phe	Asp	Pro	Phe	Ile	Ser	Thr	Asn	Ile	Gln	Tyr	Phe	Leu	Asp	Arg	Phe	
	140					145					150					
tat	acc	aac	cgc	atc	tct	ttc	cgc	atg	ctt	att	aat	cag	cac	aca	ctt	532
Tyr	Thr	Asn	Arg	Ile	Ser	Phe	Arg	Met	Leu	Ile	Asn	Gln	His	Thr	Leu	
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Leu	Phe	Gly	Gly	Asp	Thr	Asn	Pro	Val	His	Pro	Lys	His	Ile	Gly	Ser	
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atc	gat	ccc	acc	tgt	aac	gtg	gcg	gat	gtg	gtg	aaa	gat	gca	tat	gaa	628
Ile	Asp	Pro	Thr	Cys	Asn	Val	Ala	Asp	Val	Val	Lys	Asp	Ala	Tyr	Glu	
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aca	gcc	aag	atg	ctg	tgt	gaa	cag	tat	tac	ctg	gta	gct	cca	gag	ctg	676
Thr	Ala	Lys	Met	Leu	Cys	Glu	Gln	Tyr	Tyr	Leu	Val	Ala	Pro	Glu	Leu	
		205					210					215				
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Glu	Val	Glu	Glu	Phe	Asn	Ala	Lys	Ala	Pro	Asp	Lys	Pro	Ile	Gln	Val	
		220				225					230					
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Val	Tyr	Val	Pro	Ser	His	Leu	Phe	His	Met	Leu	Phe	Glu	Leu	Phe	Lys	
					240					245					250	
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Asn	Ser	Met	Arg	Ala	Thr	Val	Glu	Leu	Tyr	Glu	Asp	Arg	Lys	Glu	Gly	
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tac	cct	gct	gtt	aaa	acc	ctc	gtt	act	ttg	ggg	aaa	gaa	gac	tta	tcc	868
Tyr	Pro	Ala	Val	Lys	Thr	Leu	Val	Thr	Leu	Gly	Lys	Glu	Asp	Leu	Ser	
				270				275					280			
att	aag	atc	agt	gac	cta	ggg	ggg	ggg	gtc	cca	ctt	cga	aaa	ata	gat	916
Ile	Lys	Ile	Ser	Asp	Leu	Gly	Gly	Gly	Val	Pro	Leu	Arg	Lys	Ile	Asp	
		285				290						295				

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cgt ctt ttt aac tac atg tat tct act gct cct agg ccc agc ctg gag 964
Arg Leu Phe Asn Tyr Met Tyr Ser Thr Ala Pro Arg Pro Ser Leu Glu
300 305 310

cct acc aga gct gcc cct ttg gct gga ttt ggt tat ggt ttg cca att 1012
Pro Thr Arg Ala Ala Pro Leu Ala Gly Phe Gly Tyr Gly Leu Pro Ile
315 320 325 330

tcc cgt ctg tat gct aga tat ttt caa gga gat ctg aaa ctg tat tcc 1060
Ser Arg Leu Tyr Ala Arg Tyr Phe Gln Gly Asp Leu Lys Leu Tyr Ser
335 340 345

atg gaa gga gtg ggt act gat gct gtc att tat ttg aag gct ctt tca 1108
Met Glu Gly Val Gly Thr Asp Ala Val Ile Tyr Leu Lys Ala Leu Ser
350 355 360

agt gag tca ttt gag aga ctt cca gtt ttt aat aag tcc gca tgg cgc 1156
Ser Glu Ser Phe Glu Arg Leu Pro Val Phe Asn Lys Ser Ala Trp Arg
365 370 375

cat tac aag acc acg cct gaa gcc gat gat tgg agc aat ccc agc agt 1204
His Tyr Lys Thr Thr Pro Glu Ala Asp Asp Trp Ser Asn Pro Ser Ser
380 385 390

gaa ccc agg gat gct tca aaa tac aaa gca aaa cag taa tataccacct 1253
Glu Pro Arg Asp Ala Ser Lys Tyr Lys Ala Lys Gln *
395 400 405

tgatttccat tacaaagtat ctgatttgtc tgaataaagg tgtcccactc actgttccag 1313
gaattcttgc agtgtagagg tattcacaac agcaagcagg gatttggcct gccatcaatt 1373
ttatttaaaa agcaattaag tttgcagttt gtcctcataa acgttgtagg ttgaaactga 1433
aaaataagtt aaaatgatca atcaagataa aagggtgatct atccatccaa tggaatatta 1493
tttggcctta aaaaggaagg acatctgata tgtgctgcaa catgggtgaa tcttgaagtc 1553
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<212> PRT
<213> Homo Sapiens

<400> 16
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Glu Arg Tyr Ser Arg Phe Ser Pro Ser Pro Leu Ser Ile Lys Gln Phe
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Leu Asp Phe Gly Arg Asp Asn Ala Cys Glu Lys Thr Ser Tyr Met Phe
35 40 45
Leu Arg Lys Glu Leu Pro Val Arg Leu Ala Asn Thr Met Arg Glu Val
50 55 60
Asn Leu Leu Pro Asp Asn Leu Leu Asn Arg Pro Ser Val Gly Leu Val
65 70 75 80
Gln Ser Trp Tyr Met Gln Ser Phe Leu Glu Leu Leu Glu Tyr Glu Asn
85 90 95
Lys Ser Pro Glu Asp Pro Gln Val Leu Asp Asn Phe Leu Gln Val Leu
100 105 110
Ile Lys Val Arg Asn Arg His Asn Asp Val Val Pro Thr Met Ala Gln
115 120 125
Gly Val Ile Glu Tyr Lys Glu Lys Phe Gly Phe Asp Pro Phe Ile Ser
130 135 140
Thr Asn Ile Gln Tyr Phe Leu Asp Arg Phe Tyr Thr Asn Arg Ile Ser
145 150 155 160

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Phe	Arg	Met	Leu	Ile	Asn	Gln	His	Thr	Leu	Leu	Phe	Gly	Gly	Asp	Thr		
				165					170					175			
Asn	Pro	Val	His	Pro	Lys	His	Ile	Gly	Ser	Ile	Asp	Pro	Thr	Cys	Asn		
			180					185					190				
Val	Ala	Asp	Val	Val	Lys	Asp	Ala	Tyr	Glu	Thr	Ala	Lys	Met	Leu	Cys		
		195					200					205					
Glu	Gln	Tyr	Tyr	Leu	Val	Ala	Pro	Glu	Leu	Glu	Val	Glu	Glu	Phe	Asn		
		210				215					220						
Ala	Lys	Ala	Pro	Asp	Lys	Pro	Ile	Gln	Val	Val	Tyr	Val	Pro	Ser	His		
225					230					235					240		
Leu	Phe	His	Met	Leu	Phe	Glu	Leu	Phe	Lys	Asn	Ser	Met	Arg	Ala	Thr		
			245						250					255			
Val	Glu	Leu	Tyr	Glu	Asp	Arg	Lys	Glu	Gly	Tyr	Pro	Ala	Val	Lys	Thr		
		260						265					270				
Leu	Val	Thr	Leu	Gly	Lys	Glu	Asp	Leu	Ser	Ile	Lys	Ile	Ser	Asp	Leu		
		275					280					285					
Gly	Gly	Gly	Val	Pro	Leu	Arg	Lys	Ile	Asp	Arg	Leu	Phe	Asn	Tyr	Met		
		290				295					300						
Tyr	Ser	Thr	Ala	Pro	Arg	Pro	Ser	Leu	Glu	Pro	Thr	Arg	Ala	Ala	Pro		
305					310					315					320		
Leu	Ala	Gly	Phe	Gly	Tyr	Gly	Leu	Pro	Ile	Ser	Arg	Leu	Tyr	Ala	Arg		
			325					330						335			
Tyr	Phe	Gln	Gly	Asp	Leu	Lys	Leu	Tyr	Ser	Met	Glu	Gly	Val	Gly	Thr		
		340						345					350				
Asp	Ala	Val	Ile	Tyr	Leu	Lys	Ala	Leu	Ser	Ser	Glu	Ser	Phe	Glu	Arg		
		355					360					365					
Leu	Pro	Val	Phe	Asn	Lys	Ser	Ala	Trp	Arg	His	Tyr	Lys	Thr	Thr	Pro		
		370				375					380						
Glu	Ala	Asp	Asp	Trp	Ser	Asn	Pro	Ser	Ser	Glu	Pro	Arg	Asp	Ala	Ser		
385					390					395					400		
Lys	Tyr	Lys	Ala	Lys	Gln												
				405													

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 <212> DNA  
 <213> Homo Sapiens

<220>  
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 <222> (1)...(1767)

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Met	Ser	Ser	Cys	Val	Ser	Ser	Gln	Pro	Ser	Ser	Asn	Arg	Ala	Ala	Pro	
1				5					10					15		
cag	gat	gag	ctg	ggg	ggc	agg	ggc	agc	agc	agc	agc	gaa	agc	cag	aag	96
Gln	Asp	Glu	Leu	Gly	Gly	Arg	Gly	Ser	Ser	Ser	Ser	Glu	Ser	Gln	Lys	
			20					25					30			
ccc	tgt	gag	gcc	ctg	cgg	ggc	ctc	tca	tcc	ttg	agc	atc	cac	ctg	ggc	144
Pro	Cys	Glu	Ala	Leu	Arg	Gly	Leu	Ser	Ser	Leu	Ser	Ile	His	Leu	Gly	
			35				40					45				
atg	gag	tcc	ttc	att	gtg	gtc	acc	gag	tgt	gag	ccg	ggc	tgt	gct	gtg	192
Met	Glu	Ser	Phe	Ile	Val	Val	Thr	Glu	Cys	Glu	Pro	Gly	Cys	Ala	Val	
		50				55					60					
gac	ctc	ggc	ttg	gcg	cgg	gac	cgg	ccc	ctg	gag	gcc	gat	ggc	caa	gag	240
Asp	Leu	Gly	Leu	Ala	Arg	Asp	Arg	Pro	Leu	Glu	Ala	Asp	Gly	Gln	Glu	

65		70		75		80	
gtc ccc ctt gac tcc tcc ggg tcc cag gcc cgg ccc cac ctc tcc ggt	288						
Val Pro Leu Asp Ser Ser Gly Ser Gln Ala Arg Pro His Leu Ser Gly							
		85		90		95	
cgc aag ctg tct ctg caa gag cgg tcc cag ggt ggg ctg gca gcc ggt	336						
Arg Lys Leu Ser Leu Gln Glu Arg Ser Gln Gly Gly Leu Ala Ala Gly		100		105		110	
ggc agc ctg gac atg aac gga cgc tgc atc tgc ccg tcc ctg ccc tac	384						
Gly Ser Leu Asp Met Asn Gly Arg Cys Ile Cys Pro Ser Leu Pro Tyr		115		120		125	
tca ccc gtc agc tcc ccg cag tcc tcg cct cgg ctg ccc cgg cgg ccg	432						
Ser Pro Val Ser Ser Pro Gln Ser Ser Pro Arg Leu Pro Arg Arg Pro		130		135		140	
aca gtg gag tct cac cac gtc tcc atc acg ggt atg cag gac tgt gtg	480						
Thr Val Glu Ser His His Val Ser Ile Thr Gly Met Gln Asp Cys Val		145		150		155	160
cag ctg aat cag tat acc ctg aag gat gaa att gga aag ggc tcc tat	528						
Gln Leu Asn Gln Tyr Thr Leu Lys Asp Glu Ile Gly Lys Gly Ser Tyr		165		170		175	
ggt gtc gtc aag ttg gcc tac aat gaa aat gac aat acc tac tat gca	576						
Gly Val Val Lys Leu Ala Tyr Asn Glu Asn Asp Asn Thr Tyr Tyr Ala		180		185		190	
atg aag gtg ctg tcc aaa aag aag ctg atc cgg cag gcc ggc ttt cca	624						
Met Lys Val Leu Ser Lys Lys Lys Leu Ile Arg Gln Ala Gly Phe Pro		195		200		205	
cgt cgc cct cca ccc cga ggc acc cgg cca gct cct gga ggc tgc atc	672						
Arg Arg Pro Pro Pro Arg Gly Thr Arg Pro Ala Pro Gly Gly Cys Ile		210		215		220	
cag ccc agg ggc ccc att gag cag gtg tac cag gaa att gcc atc ctc	720						
Gln Pro Arg Gly Pro Ile Glu Gln Val Tyr Gln Glu Ile Ala Ile Leu		225		230		235	240
aag aag ctg gac cac ccc aat gtg gtg aag ctg gtg gag gtc ctg gat	768						
Lys Lys Leu Asp His Pro Asn Val Val Lys Leu Val Glu Val Leu Asp		245		250		255	
gac ccc aat gag gac cat ctg tac atg gtg ttc gaa ctg gtc aac caa	816						
Asp Pro Asn Glu Asp His Leu Tyr Met Val Phe Glu Leu Val Asn Gln		260		265		270	
ggg ccc gtg atg gaa gtg ccc acc ctc aaa cca ctc tct gaa gac cag	864						
Gly Pro Val Met Glu Val Pro Thr Leu Lys Pro Leu Ser Glu Asp Gln		275		280		285	
gcc cgt ttc tac ttc cag gat ctg atc aaa ggc atc gag tac tta cac	912						
Ala Arg Phe Tyr Phe Gln Asp Leu Ile Lys Gly Ile Glu Tyr Leu His		290		295		300	
tac cag aag atc atc cac cgt gac atc aaa cct tcc aac ctc ctg gtc	960						
Tyr Gln Lys Ile Ile His Arg Asp Ile Lys Pro Ser Asn Leu Leu Val		305		310		315	320

gga gaa gat ggg cac atc aag atc gct gac ttt ggt gtg agc aat gaa	1008
Gly Glu Asp Gly His Ile Lys Ile Ala Asp Phe Gly Val Ser Asn Glu	
325 330 335	
ttc aag ggc agt gac gcg ctc ctc tcc aac acc gtg ggc acg ccc gcc	1056
Phe Lys Gly Ser Asp Ala Leu Leu Ser Asn Thr Val Gly Thr Pro Ala	
340 345 350	
ttc atg gca ccc gag tcg ctc tct gag acc cgc aag atc ttc tct ggg	1104
Phe Met Ala Pro Glu Ser Leu Ser Glu Thr Arg Lys Ile Phe Ser Gly	
355 360 365	
aag gcc ttg gat gtt tgg gcc atg ggt gtg aca cta tac tgc ttt gtc	1152
Lys Ala Leu Asp Val Trp Ala Met Gly Val Thr Leu Tyr Cys Phe Val	
370 375 380	
ttt ggc cag tgc cca ttc atg gac gag cgg atc atg tgt tta cac agt	1200
Phe Gly Gln Cys Pro Phe Met Asp Glu Arg Ile Met Cys Leu His Ser	
385 390 395 400	
aag atc aag agt cag gcc ctg gaa ttt cca gac cag ccc gac ata gct	1248
Lys Ile Lys Ser Gln Ala Leu Glu Phe Pro Asp Gln Pro Asp Ile Ala	
405 410 415	
gag gac ttg aag gac ctg atc acc cgt atg ctg gac aag aac ccc gag	1296
Glu Asp Leu Lys Asp Leu Ile Thr Arg Met Leu Asp Lys Asn Pro Glu	
420 425 430	
tcg agg atc gtg gtg ccg gaa atc aag ctg cac ccc tgg gtc acg agg	1344
Ser Arg Ile Val Val Pro Glu Ile Lys Leu His Pro Trp Val Thr Arg	
435 440 445	
cat ggg gcg gag ccg ttg ccg tcg gag gat gag aac tgc acg ctg gtc	1392
His Gly Ala Glu Pro Leu Pro Ser Glu Asp Glu Asn Cys Thr Leu Val	
450 455 460	
gaa gtg act gaa gag gag gtc gag aac tca gtc aaa cac att ccc agc	1440
Glu Val Thr Glu Glu Glu Val Glu Asn Ser Val Lys His Ile Pro Ser	
465 470 475 480	
ttg gca acc gtg atc ctg gtg aag acc atg ata cgt aaa cgc tcc ttt	1488
Leu Ala Thr Val Ile Leu Val Lys Thr Met Ile Arg Lys Arg Ser Phe	
485 490 495	
ggg aac cca ttc gag ggc agc cgg cgg gag gaa cgc tca ctg tca gcg	1536
Gly Asn Pro Phe Glu Gly Ser Arg Arg Glu Glu Arg Ser Leu Ser Ala	
500 505 510	
cct gga aac ttg ctc acc aaa aaa cca acc agg gaa tgt gag tcc ctg	1584
Pro Gly Asn Leu Leu Thr Lys Lys Pro Thr Arg Glu Cys Glu Ser Leu	
515 520 525	
tct gag ctc aag gaa gca agg cag cga aga caa cct cca ggg cac cga	1632
Ser Glu Leu Lys Glu Ala Arg Gln Arg Arg Gln Pro Pro Gly His Arg	
530 535 540	
ccc gcc ccc cgt ggg gga gga gga agt gct ctt gtg aga ggc agt ccc	1680
Pro Ala Pro Arg Gly Gly Gly Gly Ser Ala Leu Val Arg Gly Ser Pro	
545 550 555 560	
tgc gtg gaa agt tgc tgg gcc ccc gcc ccc ggc tcc ccc gca cgc atg	1728
Cys Val Glu Ser Cys Trp Ala Pro Ala Pro Gly Ser Pro Ala Arg Met	

565

570

575

cat cca ctg cgg ccg gag gag gcc atg gag ccc gag tag  
 His Pro Leu Arg Pro Glu Glu Ala Met Glu Pro Glu \*  
 580 585

1767

&lt;210&gt; 18

&lt;211&gt; 588

&lt;212&gt; PRT

&lt;213&gt; Homo Sapiens

&lt;400&gt; 18

Met Ser Ser Cys Val Ser Ser Gln Pro Ser Ser Asn Arg Ala Ala Pro  
 1 5 10 15  
 Gln Asp Glu Leu Gly Gly Arg Gly Ser Ser Ser Ser Glu Ser Gln Lys  
 20 25 30  
 Pro Cys Glu Ala Leu Arg Gly Leu Ser Ser Leu Ser Ile His Leu Gly  
 35 40 45  
 Met Glu Ser Phe Ile Val Val Thr Glu Cys Glu Pro Gly Cys Ala Val  
 50 55 60  
 Asp Leu Gly Leu Ala Arg Asp Arg Pro Leu Glu Ala Asp Gly Gln Glu  
 65 70 75 80  
 Val Pro Leu Asp Ser Ser Gly Ser Gln Ala Arg Pro His Leu Ser Gly  
 85 90 95  
 Arg Lys Leu Ser Leu Gln Glu Arg Ser Gln Gly Gly Leu Ala Ala Gly  
 100 105 110  
 Gly Ser Leu Asp Met Asn Gly Arg Cys Ile Cys Pro Ser Leu Pro Tyr  
 115 120 125  
 Ser Pro Val Ser Ser Pro Gln Ser Ser Pro Arg Leu Pro Arg Arg Pro  
 130 135 140  
 Thr Val Glu Ser His His Val Ser Ile Thr Gly Met Gln Asp Cys Val  
 145 150 155 160  
 Gln Leu Asn Gln Tyr Thr Leu Lys Asp Glu Ile Gly Lys Gly Ser Tyr  
 165 170 175  
 Gly Val Val Lys Leu Ala Tyr Asn Glu Asn Asp Asn Thr Tyr Tyr Ala  
 180 185 190  
 Met Lys Val Leu Ser Lys Lys Lys Leu Ile Arg Gln Ala Gly Phe Pro  
 195 200 205  
 Arg Arg Pro Pro Pro Arg Gly Thr Arg Pro Ala Pro Gly Gly Cys Ile  
 210 215 220  
 Gln Pro Arg Gly Pro Ile Glu Gln Val Tyr Gln Glu Ile Ala Ile Leu  
 225 230 235 240  
 Lys Lys Leu Asp His Pro Asn Val Val Lys Leu Val Glu Val Leu Asp  
 245 250 255  
 Asp Pro Asn Glu Asp His Leu Tyr Met Val Phe Glu Leu Val Asn Gln  
 260 265 270  
 Gly Pro Val Met Glu Val Pro Thr Leu Lys Pro Leu Ser Glu Asp Gln  
 275 280 285  
 Ala Arg Phe Tyr Phe Gln Asp Leu Ile Lys Gly Ile Glu Tyr Leu His  
 290 295 300  
 Tyr Gln Lys Ile Ile His Arg Asp Ile Lys Pro Ser Asn Leu Leu Val  
 305 310 315 320  
 Gly Glu Asp Gly His Ile Lys Ile Ala Asp Phe Gly Val Ser Asn Glu  
 325 330 335  
 Phe Lys Gly Ser Asp Ala Leu Leu Ser Asn Thr Val Gly Thr Pro Ala  
 340 345 350  
 Phe Met Ala Pro Glu Ser Leu Ser Glu Thr Arg Lys Ile Phe Ser Gly  
 355 360 365  
 Lys Ala Leu Asp Val Trp Ala Met Gly Val Thr Leu Tyr Cys Phe Val  
 370 375 380  
 Phe Gly Gln Cys Pro Phe Met Asp Glu Arg Ile Met Cys Leu His Ser

385		390		395		400
Lys Ile Lys Ser Gln Ala Leu Glu Phe Pro Asp Gln Pro Asp Ile Ala						
	405			410		415
Glu Asp Leu Lys Asp Leu Ile Thr Arg Met Leu Asp Lys Asn Pro Glu						
	420		425		430	
Ser Arg Ile Val Val Pro Glu Ile Lys Leu His Pro Trp Val Thr Arg						
	435		440		445	
His Gly Ala Glu Pro Leu Pro Ser Glu Asp Glu Asn Cys Thr Leu Val						
	450		455		460	
Glu Val Thr Glu Glu Glu Val Glu Asn Ser Val Lys His Ile Pro Ser						
	465		470		475	480
Leu Ala Thr Val Ile Leu Val Lys Thr Met Ile Arg Lys Arg Ser Phe						
	485		490			495
Gly Asn Pro Phe Glu Gly Ser Arg Arg Glu Glu Arg Ser Leu Ser Ala						
	500		505		510	
Pro Gly Asn Leu Leu Thr Lys Lys Pro Thr Arg Glu Cys Glu Ser Leu						
	515		520		525	
Ser Glu Leu Lys Glu Ala Arg Gln Arg Arg Gln Pro Pro Gly His Arg						
	530		535		540	
Pro Ala Pro Arg Gly Gly Gly Ser Ala Leu Val Arg Gly Ser Pro						
	545		550		555	560
Cys Val Glu Ser Cys Trp Ala Pro Ala Pro Gly Ser Pro Ala Arg Met						
	565		570			575
His Pro Leu Arg Pro Glu Glu Ala Met Glu Pro Glu						
	580		585			

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 <212> DNA  
 <213> Homo Sapiens

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 <222> (91)...(972)

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 attataaggc tgtctgcaga gatttgaaaa atg gca aca aat gaa agt gtc agc 114  
 Met Ala Thr Asn Glu Ser Val Ser  
 1 5

atc ttt agt tca gca tcc ttg gct gtg gaa tat gta gat tca ctt tta 162  
 Ile Phe Ser Ser Ala Ser Leu Ala Val Glu Tyr Val Asp Ser Leu Leu  
 10 15 20

cct gag aat cct ctg caa gaa cca ttt aaa aat gct tgg aac tat atg 210  
 Pro Glu Asn Pro Leu Gln Glu Pro Phe Lys Asn Ala Trp Asn Tyr Met  
 25 30 35 40

ttg aat aat tat aca aag ttc cag att gca aca tgg gga tcc ctt ata 258  
 Leu Asn Asn Tyr Thr Lys Phe Gln Ile Ala Thr Trp Gly Ser Leu Ile  
 45 50 55

gtt cat gaa gcc ctt tat ttc tta ttc tgt tta cct gga ttt tta ttt 306  
 Val His Glu Ala Leu Tyr Phe Leu Phe Cys Leu Pro Gly Phe Leu Phe  
 60 65 70

caa ttt ata cct tat atg aaa aaa tac aaa att caa aag gat aag cca 354  
 Gln Phe Ile Pro Tyr Met Lys Lys Tyr Lys Ile Gln Lys Asp Lys Pro  
 75 80 85



gag aca tgg gaa aac caa tgg aag tgt ttc aaa gtt ctt ctc ttt aat	402
Glu Thr Trp Glu Asn Gln Trp Lys Cys Phe Lys Val Leu Leu Phe Asn	
90 95 100	
cac ttc tgt atc cag ctg cct ttg att tgt gga acc tat tat ttt aca	450
His Phe Cys Ile Gln Leu Pro Leu Ile Cys Gly Thr Tyr Tyr Phe Thr	
105 110 115 120	
gag tat ttc aat att cct tat gat tgg gaa aga atg cca aga tgg tat	498
Glu Tyr Phe Asn Ile Pro Tyr Asp Trp Glu Arg Met Pro Arg Trp Tyr	
125 130 135	
ttt ctt ttg gca aga tgc ttt ggt tgt gca gtc att gaa gat act tgg	546
Phe Leu Leu Ala Arg Cys Phe Gly Cys Ala Val Ile Glu Asp Thr Trp	
140 145 150	
cac tat ttt ctg cat aga ctc tta cac cac aaa aga ata tac aag tat	594
His Tyr Phe Leu His Arg Leu Leu His His Lys Arg Ile Tyr Lys Tyr	
155 160 165	
att cat aaa gtt cat cat gag ttt cag gct cca ttt gga atg gaa gct	642
Ile His Lys Val His His Glu Phe Gln Ala Pro Phe Gly Met Glu Ala	
170 175 180	
gaa tat gca cat cct ttg gag act cta att ctt gga act gga ttt ttc	690
Glu Tyr Ala His Pro Leu Glu Thr Leu Ile Leu Gly Thr Gly Phe Phe	
185 190 195 200	
att gga atc gtg ctt ttg tgt gat cat gta att ctt ctt tgg gca tgg	738
Ile Gly Ile Val Leu Leu Cys Asp His Val Ile Leu Leu Trp Ala Trp	
205 210 215	
gtg acc att cgt tta tta gaa act att gat gtc cat agt ggt tat gat	786
Val Thr Ile Arg Leu Leu Glu Thr Ile Asp Val His Ser Gly Tyr Asp	
220 225 230	
att cct ctc aac cct tta aat ctg atc cct ttc tat gct ggt tct cgg	834
Ile Pro Leu Asn Pro Leu Asn Leu Ile Pro Phe Tyr Ala Gly Ser Arg	
235 240 245	
cat cat gat ttc cac cac atg aac ttc att gga aac tat gct tca aca	882
His His Asp Phe His His Met Asn Phe Ile Gly Asn Tyr Ala Ser Thr	
250 255 260	
ttt aca tgg tgg gat cga att ttt gga aca gac tct cag tat aat gcc	930
Phe Thr Trp Trp Asp Arg Ile Phe Gly Thr Asp Ser Gln Tyr Asn Ala	
265 270 275 280	
tat aat gaa aag agg aag aag ttt gag aaa aag act gaa taa	972
Tyr Asn Glu Lys Arg Lys Lys Phe Glu Lys Lys Thr Glu *	
285 290	
atatctcacg taaaccttcc tgaaagataa acgttttcct gaattcagaa actagtagct	1032
aacattgctt ctggagagca gaaataagca tgtcttcttg ctactaagtg ataaaaagaa	1092
cattaacaac ctttaattac cttcctagtg ggaacttttt ctactttacc tacaagttct	1152
atatatgtag aaatgaataa atatataattt aagtacagtt ttcattgagga agtttttaaaa	1212
gaccatgttc ctaagcttcc aagaaggttt tgatactag aagtattaat ctatggcttt	1272
tctcccagta aaaccatagg cctgaagttc acattgggtc tttaaatctt ttagatatat	1332
actggtcatt tcagaaaatt cttcatagtg gtattggcct tatattttaac ttttttttta	1392
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ctcagctcac tgc	1465

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 <211> 293  
 <212> PRT  
 <213> Homo Sapiens

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 Val Glu Tyr Val Asp Ser Leu Leu Pro Glu Asn Pro Leu Gln Glu Pro  
 20 25 30  
 Phe Lys Asn Ala Trp Asn Tyr Met Leu Asn Asn Tyr Thr Lys Phe Gln  
 35 40 45  
 Ile Ala Thr Trp Gly Ser Leu Ile Val His Glu Ala Leu Tyr Phe Leu  
 50 55 60  
 Phe Cys Leu Pro Gly Phe Leu Phe Gln Phe Ile Pro Tyr Met Lys Lys  
 65 70 75 80  
 Tyr Lys Ile Gln Lys Asp Lys Pro Glu Thr Trp Glu Asn Gln Trp Lys  
 85 90 95  
 Cys Phe Lys Val Leu Leu Phe Asn His Phe Cys Ile Gln Leu Pro Leu  
 100 105 110  
 Ile Cys Gly Thr Tyr Tyr Phe Thr Glu Tyr Phe Asn Ile Pro Tyr Asp  
 115 120 125  
 Trp Glu Arg Met Pro Arg Trp Tyr Phe Leu Leu Ala Arg Cys Phe Gly  
 130 135 140  
 Cys Ala Val Ile Glu Asp Thr Trp His Tyr Phe Leu His Arg Leu Leu  
 145 150 155 160  
 His His Lys Arg Ile Tyr Lys Tyr Ile His Lys Val His His Glu Phe  
 165 170 175  
 Gln Ala Pro Phe Gly Met Glu Ala Glu Tyr Ala His Pro Leu Glu Thr  
 180 185 190  
 Leu Ile Leu Gly Thr Gly Phe Phe Ile Gly Ile Val Leu Leu Cys Asp  
 195 200 205  
 His Val Ile Leu Leu Trp Ala Trp Val Thr Ile Arg Leu Leu Glu Thr  
 210 215 220  
 Ile Asp Val His Ser Gly Tyr Asp Ile Pro Leu Asn Pro Leu Asn Leu  
 225 230 235 240  
 Ile Pro Phe Tyr Ala Gly Ser Arg His His Asp Phe His His Met Asn  
 245 250 255  
 Phe Ile Gly Asn Tyr Ala Ser Thr Phe Thr Trp Trp Asp Arg Ile Phe  
 260 265 270  
 Gly Thr Asp Ser Gln Tyr Asn Ala Tyr Asn Glu Lys Arg Lys Lys Phe  
 275 280 285  
 Glu Lys Lys Thr Glu  
 290

<210> 21  
 <211> 897  
 <212> DNA  
 <213> Homo Sapiens

<220>  
 <221> CDS  
 <222> (37)...(870)

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 gaa tgc atg gat tat gca gta act cta gca aga caa gct gga gag gta 102  
 Glu Cys Met Asp Tyr Ala Val Thr Leu Ala Arg Gln Ala Gly Glu Val

10					15					20						
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Val	Cys	Glu	Ala	Ile	Lys	Asn	Glu	Met	Asn	Val	Met	Leu	Lys	Ser	Ser	
		25					30					35				
cca	gtt	gat	ttg	gta	act	gct	acg	gac	caa	aaa	gtt	gaa	aaa	atg	ctt	198
Pro	Val	Asp	Leu	Val	Thr	Ala	Thr	Asp	Gln	Lys	Val	Glu	Lys	Met	Leu	
	40					45					50					
atc	tct	tcc	ata	aag	gaa	aag	tat	cca	tct	cac	agt	ttc	att	ggg	gaa	246
Ile	Ser	Ser	Ile	Lys	Glu	Lys	Tyr	Pro	Ser	His	Ser	Phe	Ile	Gly	Glu	
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gaa	tct	gtg	gca	gct	ggg	gaa	aaa	agt	atc	tta	acc	gac	aac	ccc	aca	294
Glu	Ser	Val	Ala	Ala	Gly	Glu	Lys	Ser	Ile	Leu	Thr	Asp	Asn	Pro	Thr	
			75						80					85		
tgg	atc	att	gac	cct	att	gat	gga	aca	act	aac	ttt	gta	cat	aga	ttt	342
Trp	Ile	Ile	Asp	Pro	Ile	Asp	Gly	Thr	Thr	Asn	Phe	Val	His	Arg	Phe	
			90					95					100			
cct	ttt	gta	gct	gtt	tca	att	ggc	ttt	gct	gta	aat	aaa	aag	ata	gaa	390
Pro	Phe	Val	Ala	Val	Ser	Ile	Gly	Phe	Ala	Val	Asn	Lys	Lys	Ile	Glu	
		105					110					115				
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Phe	Gly	Val	Val	Tyr	Ser	Cys	Val	Glu	Gly	Lys	Met	Tyr	Thr	Ala	Arg	
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aaa	gga	aaa	ggg	gcc	ttt	tgt	aat	ggg	caa	aaa	cta	caa	gtt	tca	caa	486
Lys	Gly	Lys	Gly	Ala	Phe	Cys	Asn	Gly	Gln	Lys	Leu	Gln	Val	Ser	Gln	
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Gln	Glu	Asp	Ile	Thr	Lys	Ser	Leu	Leu	Val	Thr	Glu	Leu	Gly	Ser	Ser	
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Arg	Thr	Pro	Glu	Thr	Val	Arg	Met	Val	Leu	Ser	Asn	Met	Glu	Lys	Leu	
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Phe	Cys	Ile	Pro	Val	His	Gly	Ile	Arg	Ser	Val	Gly	Thr	Ala	Ala	Val	
		185				190						195				
aat	atg	tgc	ctt	gtg	gca	act	ggc	gga	gca	gat	gca	tat	tat	gaa	atg	678
Asn	Met	Cys	Leu	Val	Ala	Thr	Gly	Gly	Ala	Asp	Ala	Tyr	Tyr	Glu	Met	
	200					205					210					
gga	att	cac	tgc	tgg	gat	gtt	gca	gga	gct	ggc	att	att	gtt	act	gaa	726
Gly	Ile	His	Cys	Trp	Asp	Val	Ala	Gly	Ala	Gly	Ile	Ile	Val	Thr	Glu	
	215				220					225					230	
gct	ggg	ggc	gtg	cta	atg	gat	gtt	aca	ggg	gga	cca	ttt	gat	ttg	atg	774
Ala	Gly	Gly	Val	Leu	Met	Asp	Val	Thr	Gly	Gly	Pro	Phe	Asp	Leu	Met	
			235						240					245		
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Ser	Arg	Arg	Val	Ile	Ala	Ala	Asn	Asn	Arg	Ile	Leu	Ala	Glu	Arg	Ile	
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gct aaa gaa att cag gtt ata cct ttg caa cga gac gac gaa gat taa 870  
 Ala Lys Glu Ile Gln Val Ile Pro Leu Gln Arg Asp Asp Glu Asp \*  
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 Val Met Leu Lys Ser Ser Pro Val Asp Leu Val Thr Ala Thr Asp Gln  
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 Lys Val Glu Lys Met Leu Ile Ser Ser Ile Lys Glu Lys Tyr Pro Ser  
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 His Ser Phe Ile Gly Glu Ser Val Ala Ala Gly Glu Lys Ser Ile  
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 Leu Thr Asp Asn Pro Thr Trp Ile Ile Asp Pro Ile Asp Gly Thr Thr  
                           85                          90                          95  
 Asn Phe Val His Arg Phe Pro Phe Val Ala Val Ser Ile Gly Phe Ala  
                          100                         105                         110  
 Val Asn Lys Lys Ile Glu Phe Gly Val Val Tyr Ser Cys Val Glu Gly  
          115                         120                         125  
 Lys Met Tyr Thr Ala Arg Lys Gly Lys Gly Ala Phe Cys Asn Gly Gln  
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 Lys Leu Gln Val Ser Gln Gln Glu Asp Ile Thr Lys Ser Leu Leu Val  
  145                         150                         155                         160  
 Thr Glu Leu Gly Ser Ser Arg Thr Pro Glu Thr Val Arg Met Val Leu  
                          165                         170                         175  
 Ser Asn Met Glu Lys Leu Phe Cys Ile Pro Val His Gly Ile Arg Ser  
                          180                         185                         190  
 Val Gly Thr Ala Ala Val Asn Met Cys Leu Val Ala Thr Gly Gly Ala  
          195                         200                         205  
 Asp Ala Tyr Tyr Glu Met Gly Ile His Cys Trp Asp Val Ala Gly Ala  
  210                         215                         220  
 Gly Ile Ile Val Thr Glu Ala Gly Gly Val Leu Met Asp Val Thr Gly  
  225                         230                         235                         240  
 Gly Pro Phe Asp Leu Met Ser Arg Arg Val Ile Ala Ala Asn Asn Arg  
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 Ile Leu Ala Glu Arg Ile Ala Lys Glu Ile Gln Val Ile Pro Leu Gln  
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 Arg Asp Asp Glu Asp  
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			Met Ser Gln	Lys Ser Trp	Ile	
			1		5	
gaa agc act	ttg acc aag	agg gaa tgt	gta tat att	ata cca agt	tcc	282
Glu Ser Thr	Leu Thr Lys	Arg Glu Cys	Val Tyr Ile	Ile Pro Ser	Ser	
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aag gac cct	cac aga tgc	ctt cca gga	tgt caa att	tgt cag caa	ctc	330
Lys Asp Pro	His Arg Cys	Leu Pro Gly	Cys Gln Ile	Cys Gln Gln	Leu	
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gtc agg tgt	ttt tgt ggt	cgc ttg gtc	aag caa cat	gct tgt ttt	act	378
Val Arg Cys	Phe Cys Gly	Arg Leu Val	Lys Gln His	Ala Cys Phe	Thr	
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gca agt ctt	gcc atg aaa	tac tca gat	gtg aaa ttg	ggt gac cat	ttt	426
Ala Ser Leu	Ala Met Lys	Tyr Ser Asp	Val Lys Leu	Gly Asp His	Phe	
	60		65		70	
aat cag gca	ata gaa gaa	tgg tct gtg	gaa aag cat	aca gaa cag	agc	474
Asn Gln Ala	Ile Glu Glu	Trp Ser Val	Glu Lys His	Thr Glu Gln	Ser	
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cca acg gat	gct tat gga	gtc ata aat	ttt caa ggg	ggt tct cat	tcc	522
Pro Thr Asp	Ala Tyr Gly	Val Ile Asn	Phe Gln Gly	Gly Ser His	Ser	
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Tyr Arg Ala	Lys Tyr Val	Arg Leu Ser	Tyr Asp Thr	Lys Pro Glu	Val	
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att ctg caa	ctt ctg ctt	aaa gaa tgg	caa atg gag	tta ccc aaa	ctt	618
Ile Leu Gln	Leu Leu Leu	Lys Glu Trp	Gln Met Gln	Leu Pro Lys	Leu	
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gtt atc tct	gta cat ggg	ggc atg cag	aaa ttt gag	ctt cac cca	cga	666
Val Ile Ser	Val His Gly	Gly Met Gln	Lys Phe Glu	Leu His Pro	Arg	
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atc aag cag	ttg ctt gga	aaa ggt ctt	att aaa gct	gca gtt aca	act	714
Ile Lys Gln	Leu Leu Gly	Lys Gly Leu	Ile Lys Ala	Ala Val Thr	Thr	
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gga gcc tgg	att tta act	gga gga gta	aac aca ggt	gtg gca aaa	cat	762
Gly Ala Trp	Ile Leu Thr	Gly Gly Val	Asn Thr Gly	Val Ala Lys	His	
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gtt gga gat	gcc ctc aaa	gaa cat gct	tcc aga tca	tct cga aag	att	810
Val Gly Asp	Ala Leu Lys	Glu His Ala	Ser Arg Ser	Ser Arg Lys	Ile	
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tgc act atc	gga ata gct	cca tgg gga	gtg att gaa	aac aga aat	gat	858
Cys Thr Ile	Gly Ile Ala	Pro Trp Gly	Val Ile Glu	Asn Arg Asn	Asp	
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ctt gtt ggg	aga gat gtg	gtt gct cct	tat caa acc	tta ttg aac	ccc	906
Leu Val Gly	Arg Asp Val	Val Val Ala	Pro Tyr Gln	Thr Leu Leu	Pro	
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ctg agc aaa	ttg aat gtt	ttg aat aat	ctg cat tcc	cat ttc ata	ttg	954

Leu	Ser	Lys	Leu	Asn	Val	Leu	Asn	Asn	Leu	His	Ser	His	Phe	Ile	Leu	
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Val	Asp	Asp	Gly	Thr	Val	Gly	Lys	Tyr	Gly	Ala	Glu	Val	Arg	Leu	Arg	
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aga	gaa	ctt	gaa	aaa	act	att	aat	cag	caa	aga	att	cat	gct	agg	att	1050
Arg	Glu	Leu	Glu	Lys	Thr	Ile	Asn	Gln	Gln	Arg	Ile	His	Ala	Arg	Ile	
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ggc	cag	ggt	gtc	cct	gtg	gtg	gca	ctt	ata	ttt	gag	ggt	ggg	cca	aat	1098
Gly	Gln	Gly	Val	Pro	Val	Val	Ala	Leu	Ile	Phe	Glu	Gly	Gly	Pro	Asn	
280					285					290					295	
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Val	Ile	Leu	Thr	Val	Leu	Glu	Tyr	Leu	Gln	Glu	Ser	Pro	Pro	Val	Pro	
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gta	gtt	gtg	tgt	gaa	gga	aca	ggc	aga	gct	gca	gat	ctg	cta	gcg	tat	1194
Val	Val	Val	Cys	Glu	Gly	Thr	Gly	Arg	Ala	Ala	Asp	Leu	Leu	Ala	Tyr	
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Ile	His	Lys	Gln	Thr	Glu	Glu	Gly	Gly	Asn	Leu	Pro	Asp	Ala	Ala	Gly	
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cac	gat	att	att	tcc	act	atc	aaa	aaa	aca	ttt	aac	ttt	ggc	cag	aat	1290
His	Asp	Ile	Ile	Ser	Thr	Ile	Lys	Lys	Thr	Phe	Asn	Phe	Gly	Gln	Asn	
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gaa	gca	ctt	cat	tta	ttt	caa	aca	ctg	atg	gag	tgc	atg	aaa	aga	aag	1338
Glu	Ala	Leu	His	Leu	Phe	Gln	Thr	Leu	Met	Glu	Cys	Met	Lys	Arg	Lys	
360					365					370					375	
gag	ctt	atc	act	gtt	ttc	cat	att	ggg	tca	gat	gaa	cat	caa	gat	ata	1386
Glu	Leu	Ile	Thr	Val	Phe	His	Ile	Gly	Ser	Asp	Glu	His	Gln	Asp	Ile	
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gat	gta	gca	ata	ctt	act	gca	ctg	cta	aaa	ggt	act	aat	gca	tct	gca	1434
Asp	Val	Ala	Ile	Leu	Thr	Ala	Leu	Leu	Lys	Gly	Thr	Asn	Ala	Ser	Ala	
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Phe	Asp	Gln	Leu	Ile	Leu	Thr	Leu	Ala	Trp	Gly	Arg	Val	Asp	Ile	Ala	
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Lys	Asn	His	Val	Phe	Val	Tyr	Gly	Gln	Gln	Trp	Leu	Val	Gly	Ser	Leu	
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gaa	caa	gct	atg	ctt	gat	gct	ctt	gta	atg	gat	aga	gtt	gca	ttt	gta	1578
Glu	Gln	Ala	Met	Leu	Asp	Ala	Leu	Val	Met	Asp	Arg	Val	Ala	Phe	Val	
440					445					450					455	
aaa	ctt	ctt	att	gaa	aat	gga	gta	agc	atg	cat	aaa	ttc	ctt	acc	att	1626
Lys	Leu	Leu	Ile	Glu	Asn	Gly	Val	Ser	Met	His	Lys	Phe	Leu	Thr	Ile	
				460					465					470		
ccg	aga	ctg	gaa	gaa	ctt	tac	aac	act	aaa	caa	ggt	cca	act	aat	cca	1674
Pro	Arg	Leu	Glu	Glu	Leu	Tyr	Asn	Thr	Lys	Gln	Gly	Pro	Thr	Asn	Pro	
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Met Leu Phe His Leu Val Arg Asp Val Lys Gln Gly Asn Leu Pro Pro	
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Gly Tyr Lys Ile Thr Leu Ile Asp Ile Gly Leu Val Ile Glu Tyr Leu	
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Met Gly Gly Thr Tyr Arg Cys Thr Tyr Thr Arg Lys Arg Phe Arg Leu	
520 525 530 535	
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Ile Tyr Asn Ser Leu Gly Gly Asn Asn Arg Arg Ser Gly Arg Asn Thr	
540 545 550	
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Ser Ser Ser Thr Pro Gln Leu Arg Lys Ser His Glu Ser Phe Gly Asn	
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agg gca gat aaa aag gaa aaa atg agg cat aac cat ttc att aag aca	1962
Arg Ala Asp Lys Lys Glu Lys Met Arg His Asn His Phe Ile Lys Thr	
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Ala Gln Pro Tyr Arg Pro Lys Ile Asp Thr Val Met Glu Glu Gly Lys	
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Lys Lys Arg Thr Lys Asp Glu Ile Val Asp Ile Asp Asp Pro Glu Thr	
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Lys Arg Phe Pro Tyr Pro Leu Asn Glu Leu Leu Ile Trp Ala Cys Leu	
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Met Lys Arg Gln Val Met Ala Arg Phe Leu Trp Gln His Gly Glu Glu	
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Ser Met Ala Lys Ala Leu Val Ala Cys Lys Ile Tyr Arg Ser Met Ala	
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Tyr Glu Ala Lys Gln Ser Asp Leu Val Asp Asp Thr Ser Glu Glu Leu	
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Lys Gln Tyr Ser Asn Asp Phe Gly Gln Leu Ala Val Glu Leu Leu Glu	
680 685 690 695	
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Gln Ser Phe Arg Gln Asp Glu Thr Met Ala Met Lys Leu Leu Thr Tyr	
700 705 710	
gaa ctg aag aac tgg agt aat tca acc tgc ctt aag tta gca gtt tct	2394
Glu Leu Lys Asn Trp Ser Asn Ser Thr Cys Leu Lys Leu Ala Val Ser	
715 720 725	
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Ser	Arg	Leu	Arg	Pro	Phe	Val	Ala	His	Thr	Cys	Thr	Gln	Met	Leu	Leu	
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Ser	Asp	Met	Trp	Met	Gly	Arg	Leu	Asn	Met	Arg	Lys	Asn	Ser	Trp	Tyr	
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Tyr	Lys	Thr	Lys	Ala	Glu	Met	Ser	His	Ile	Pro	Gln	Ser	Gln	Asp	Ala	
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His	Gln	Met	Ser	Met	Asp	Asp	Ser	Glu	Asn	Asn	Phe	Gln	Asn	Ile	Thr	
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gaa	gag	atc	ccc	atg	gaa	gtg	ttt	aaa	gaa	gta	cgg	att	ttg	gat	agt	2682
Glu	Glu	Ile	Pro	Met	Glu	Val	Phe	Lys	Glu	Val	Arg	Ile	Leu	Asp	Ser	
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Pro	Ile	Thr	Arg	Lys	Phe	Tyr	Ala	Phe	Tyr	His	Ala	Pro	Ile	Val	Lys	
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Phe	Trp	Phe	Asn	Thr	Leu	Ala	Tyr	Leu	Gly	Phe	Leu	Met	Leu	Tyr	Thr	
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Phe	Val	Val	Leu	Val	Gln	Met	Glu	Gln	Leu	Pro	Ser	Val	Gln	Glu	Trp	
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Ile	Val	Ile	Ala	Tyr	Ile	Phe	Thr	Tyr	Ala	Ile	Glu	Lys	Val	Arg	Glu	
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Ile	Phe	Met	Ser	Glu	Ala	Gly	Lys	Val	Asn	Gln	Lys	Ile	Lys	Val	Trp	
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Phe	Ser	Asp	Tyr	Phe	Asn	Ile	Ser	Asp	Thr	Ile	Ala	Ile	Ile	Ser	Phe	
920					925					930					935	
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Phe	Ile	Gly	Phe	Gly	Leu	Arg	Phe	Gly	Ala	Lys	Trp	Asn	Phe	Ala	Asn	
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Ala	Tyr	Asp	Asn	His	Val	Phe	Val	Ala	Gly	Arg	Leu	Ile	Tyr	Cys	Leu	
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Asn	Ile	Ile	Phe	Trp	Tyr	Val	Arg	Leu	Leu	Asp	Phe	Leu	Ala	Val	Asn	
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Gln Gln Ala Gly Pro Tyr Val Met Met Ile Gly Lys Met Val Ala Asn	
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Met Phe Tyr Ile Val Val Ile Met Ala Leu Val Leu Leu Ser Phe Gly	
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Val Pro Arg Lys Ala Ile Leu Tyr Pro His Glu Ala Pro Ser Trp Thr	
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Val Tyr Ala Tyr Glu Ile Asp Val Cys Ala Asn Asp Ser Val Ile Pro	
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Gln Ile Cys Gly Pro Gly Thr Trp Leu Thr Pro Phe Leu Gln Ala Val	
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Tyr Leu Phe Val Gln Tyr Ile Ile Met Val Asn Leu Leu Ile Ala Phe	
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Phe Asn Asn Val Tyr Leu Gln Val Lys Ala Ile Ser Asn Ile Val Trp	
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Lys Tyr Gln Arg Tyr His Phe Ile Met Ala Tyr His Glu Lys Pro Val	
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Leu Pro Pro Pro Leu Ile Ile Leu Ser His Ile Val Ser Leu Phe Cys	
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Cys Ile Cys Lys Arg Arg Lys Lys Asp Lys Thr Ser Asp Gly Pro Lys	
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Leu Phe Leu Thr Glu Glu Asp Gln Lys Lys Leu His Asp Phe Glu Glu	
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Gln Cys Val Glu Met Tyr Phe Asn Glu Lys Asp Asp Lys Phe His Ser	
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Gly Ser Glu Glu Arg Ile Arg Val Thr Phe Glu Arg Val Glu Gln Met	
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Cys Ile Gln Ile Lys Glu Val Gly Asp Arg Val Asn Tyr Ile Lys Arg	
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His Asp Ile Leu Lys Ser Gly His Leu Tyr Ile Ile Lys Ser Phe Leu	
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Pro Glu Val Val Asn Thr Trp Ser Ser Ile Tyr Lys Glu Asp Thr Val	
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Leu Thr Phe Ala Phe Asn Gln Met Lys Pro Lys Ser Ile Pro Tyr Ser	
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Pro Arg Phe Leu Glu Val Phe Leu Leu Tyr Cys His Ser Ala Gly Gln	
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Trp Phe Ala Val Glu Glu Cys Met Thr Gly Glu Phe Arg Lys Tyr Asn	
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Lys Gln His Ala Cys Phe Thr Ala Ser Leu Ala Met Lys Tyr Ser Asp  
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Val Lys Leu Gly Asp His Phe Asn Gln Ala Ile Glu Glu Trp Ser Val  
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Glu Lys His Thr Glu Gln Ser Pro Thr Asp Ala Tyr Gly Val Ile Asn  
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Phe Gln Gly Gly Ser His Ser Tyr Arg Ala Lys Tyr Val Arg Leu Ser  
100 105 110  
Tyr Asp Thr Lys Pro Glu Val Ile Leu Gln Leu Leu Leu Lys Glu Trp  
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Gln Met Glu Leu Pro Lys Leu Val Ile Ser Val His Gly Gly Met Gln  
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Lys Phe Glu Leu His Pro Arg Ile Lys Gln Leu Leu Gly Lys Gly Leu  
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Asn Thr Gly Val Ala Lys His Val Gly Asp Ala Leu Lys Glu His Ala  
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Tyr Gln Thr Leu Leu Asn Pro Leu Ser Lys Leu Asn Val Leu Asn Asn  
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Gly Ala Glu Val Arg Leu Arg Arg Glu Leu Glu Lys Thr Ile Asn Gln  
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Gln Arg Ile His Ala Arg Ile Gly Gln Gly Val Pro Val Val Ala Leu  
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Ile Phe Glu Gly Gly Pro Asn Val Ile Leu Thr Val Leu Glu Tyr Leu  
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Gln Glu Ser Pro Pro Val Pro Val Val Val Cys Glu Gly Thr Gly Arg  
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Ala	Met	Lys	Leu	Leu	Thr	Tyr	Glu	Leu	Lys	Asn	Trp	Ser	Asn	Ser	Thr		
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Gln Gln Arg Ala Ala Gln Lys Leu Thr Phe Ala Phe Asn Gln Met Lys		
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Pro Lys Ser Ile Pro Tyr Ser Pro Arg Phe Leu Glu Val Phe Leu Leu		
1715	1720	1725
Tyr Cys His Ser Ala Gly Gln Trp Phe Ala Val Glu Glu Cys Met Thr		
1730	1735	1740
Gly Glu Phe Arg Lys Tyr Asn Asn Asn Asn Gly Asp Glu Ile Ile Pro		1760
1745	1750	1755
Thr Asn Thr Leu Glu Ile Met Leu Ala Phe Ser His Trp Thr Tyr		
1765	1770	1775
Glu Tyr Thr Arg Gly Glu Leu Leu Val Leu Asp Leu Gln Gly Val Gly		
1780	1785	1790
Glu Asn Leu Thr Asp Pro Ser Val Ile Lys Ala Glu Glu Lys Arg Ser		
1795	1800	1805
Cys Asp Met Val Phe Gly Pro Ala Asn Leu Gly Glu Asp Ala Ile Lys		
1810	1815	1820
Asn Phe Arg Ala Lys His His Cys Asn Ser Cys Cys Arg Lys Leu Lys		
1825	1830	1835
Leu Pro Asp Leu Lys Arg Asn Asp Tyr Thr Pro Asp Lys Ile Ile Phe		1840
1845	1850	1855
Pro Gln Asp Glu Pro Ser Asp Leu Asn Leu Gln Pro Gly Asn Ser Thr		
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Lys Glu Ser Glu Ser Thr Asn Ser Val Arg Leu Met Leu		
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 Met Val Gly Ala Met Trp Lys Val Ile Val Ser Leu Val Leu  
 1 5 10

ttg atg cct ggc ccc tgt gat ggg ctg ttt cac tcc cta tac aga agt 159  
 Leu Met Pro Gly Pro Cys Asp Gly Leu Phe His Ser Leu Tyr Arg Ser  
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gtt tcc atg cca cct aag gga gac tca gga cag cca tta ttt ctc acc 207  
 Val Ser Met Pro Pro Lys Gly Asp Ser Gly Gln Pro Leu Phe Leu Thr  
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cct tac att gaa gct ggg aag atc caa aaa gga aga gaa ttg agt ttg 255  
 Pro Tyr Ile Glu Ala Gly Lys Ile Gln Lys Gly Arg Glu Leu Ser Leu  
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gtc ggc cct ttc cca gga ctg aac atg aag agt tat gcc ggc ttc ctc 303  
 Val Gly Pro Phe Pro Gly Leu Asn Met Lys Ser Tyr Ala Gly Phe Leu  
 65 70 75

acc gtg aat aag act tac aac agc aac ctc ttc ttc tgg ttc ttc cca 351  
 Thr Val Asn Lys Thr Tyr Asn Ser Asn Leu Phe Phe Trp Phe Phe Pro  
 80 85 90

gct cag ata cag cca gaa gat gcc cca gta gtt ctc tgg cta cag ggt 399  
 Ala Gln Ile Gln Pro Glu Asp Ala Pro Val Val Leu Trp Leu Gln Gly  
 95 100 105 110

ggg ccg gga ggt tca tcc atg ttt gga ctc ttt gtg gaa cat ggg cct 447  
 Gly Pro Gly Gly Ser Ser Met Phe Gly Leu Phe Val Glu His Gly Pro  
 115 120 125

tat gtt gtc aca agt aac atg acc ttg cgt gac aga gac ttc ccc tgg 495  
 Tyr Val Val Thr Ser Asn Met Thr Leu Arg Asp Arg Asp Phe Pro Trp  
 130 135 140

acc aca acg ctc tcc atg ctt tac att gac aat cca gtg ggc aca ggc 543  
 Thr Thr Thr Leu Ser Met Leu Tyr Ile Asp Asn Pro Val Gly Thr Gly  
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ttc agt ttt act gat gat acc cac gga tat gca gtc aat gag gac gat 591  
 Phe Ser Phe Thr Asp Asp Thr His Gly Tyr Ala Val Asn Glu Asp Asp  
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gta gca cgg gat tta tac agt gca cta att cag ttt ttc cag ata ttt 639  
 Val Ala Arg Asp Leu Tyr Ser Ala Leu Ile Gln Phe Phe Gln Ile Phe  
 175 180 185 190

cct gaa tat aaa aat aat gac ttt tat gtc act ggg gag tct tat gca 687  
 Pro Glu Tyr Lys Asn Asn Asp Phe Tyr Val Thr Gly Glu Ser Tyr Ala

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Gly	Lys	Tyr	Val	Pro	Ala	Ile	Ala	His	Leu	Ile	His	Ser	Leu	Asn	Pro			
			210				215						220					
gtg	aga	gag	gtg	aag	atc	aac	ctg	aac	gga	att	gct	att	gga	gat	gga	783		
Val	Arg	Glu	Val	Lys	Ile	Asn	Leu	Asn	Gly	Ile	Ala	Ile	Gly	Asp	Gly			
			225				230						235					
tat	tct	gat	ccc	gaa	tca	att	ata	ggg	ggc	tat	gca	gaa	ttc	ctg	tac	831		
Tyr	Ser	Asp	Pro	Glu	Ser	Ile	Ile	Gly	Gly	Tyr	Ala	Glu	Phe	Leu	Tyr			
			240				245						250					
caa	att	ggc	ttg	ttg	gat	gag	aag	caa	aaa	aag	tac	ttc	cag	aag	cag	879		
Gln	Ile	Gly	Leu	Leu	Asp	Glu	Lys	Gln	Lys	Lys	Tyr	Phe	Gln	Lys	Gln			
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Cys	His	Glu	Cys	Ile	Glu	His	Ile	Arg	Lys	Gln	Asn	Trp	Leu	Glu	Ala			
			275				280						285					
ttt	gaa	ata	ctg	gat	aaa	cta	cta	gat	ggc	gac	tta	aca	agt	gat	cct	975		
Phe	Glu	Ile	Leu	Asp	Lys	Leu	Leu	Asp	Gly	Asp	Leu	Thr	Ser	Asp	Pro			
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tct	tac	ttc	cag	aat	gtt	aca	gga	tgt	agt	aat	tac	tat	aac	ttt	ttg	1023		
Ser	Tyr	Phe	Gln	Asn	Val	Thr	Gly	Cys	Ser	Asn	Tyr	Tyr	Asn	Phe	Leu			
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Arg	Cys	Thr	Glu	Pro	Glu	Asp	Gln	Leu	Tyr	Tyr	Val	Lys	Phe	Leu	Ser			
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ctc	cca	gag	gtg	aga	caa	gcc	atc	cac	gtg	ggg	aat	cag	act	ttt	aat	1119		
Leu	Pro	Glu	Val	Arg	Gln	Ala	Ile	His	Val	Gly	Asn	Gln	Thr	Phe	Asn			
			335				340						345					
gat	gga	act	ata	gtt	gaa	aag	tac	ttg	cga	gaa	gat	aca	gta	cag	tca	1167		
Asp	Gly	Thr	Ile	Val	Glu	Lys	Tyr	Leu	Arg	Glu	Asp	Thr	Val	Gln	Ser			
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gtt	aag	cca	tgg	tta	act	gaa	atc	atg	aat	aat	tat	aag	gtt	ctg	atc	1215		
Val	Lys	Pro	Trp	Leu	Thr	Glu	Ile	Met	Asn	Asn	Tyr	Lys	Val	Leu	Ile			
			370				375						380					
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Tyr	Asn	Gly	Gln	Leu	Asp	Ile	Ile	Val	Ala	Ala	Ala	Leu	Thr	Glu	His			
			385				390						395					
tcc	ttg	atg	ggc	atg	gac	tgg	aaa	gga	tcc	cag	gaa	tac	aag	aag	gca	1311		
Ser	Leu	Met	Gly	Met	Asp	Trp	Lys	Gly	Ser	Gln	Glu	Tyr	Lys	Lys	Ala			
			400				405						410					
gaa	aaa	aaa	gtt	tgg	aag	atc	ctt	aaa	tct	gac	agt	gaa	gtg	gct	ggt	1359		
Glu	Lys	Lys	Val	Trp	Lys	Ile	Leu	Lys	Ser	Asp	Ser	Glu	Val	Ala	Gly			
			415				420						425					
tac	atc	cgg	caa	gcg	ggt	gac	tcc	cat	cag	gta	att	att	cga	ggt	gga	1407		
Tyr	Ile	Arg	Gln	Ala	Gly	Asp	Ser	His	Gln	Val	Ile	Ile	Arg	Gly	Gly			
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 Gly His Ile Leu Pro Tyr Asp Gln Pro Leu Arg Ala Phe Asp Met Ile  
                   450                                  455                                  460

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 Asn Arg Phe Ile Tyr Gly Lys Gly Trp Asp Pro Tyr Val Gly \*  
                   465                                  470                                  475

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 Met Pro Pro Lys Gly Asp Ser Gly Gln Pro Leu Phe Leu Thr Pro Tyr  
                   35                                  40                                  45  
 Ile Glu Ala Gly Lys Ile Gln Lys Gly Arg Glu Leu Ser Leu Val Gly  
                   50                                  55                                  60  
 Pro Phe Pro Gly Leu Asn Met Lys Ser Tyr Ala Gly Phe Leu Thr Val  
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 Asn Lys Thr Tyr Asn Ser Asn Leu Phe Phe Trp Phe Phe Pro Ala Gln  
                   85                                  90                                  95  
 Ile Gln Pro Glu Asp Ala Pro Val Val Leu Trp Leu Gln Gly Gly Pro  
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 Gly Gly Ser Ser Met Phe Gly Leu Phe Val Glu His Gly Pro Tyr Val  
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 Val Thr Ser Asn Met Thr Leu Arg Asp Arg Asp Phe Pro Trp Thr Thr  
                   130                                  135                                  140  
 Thr Leu Ser Met Leu Tyr Ile Asp Asn Pro Val Gly Thr Gly Phe Ser  
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 Phe Thr Asp Asp Thr His Gly Tyr Ala Val Asn Glu Asp Asp Val Ala  
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 Arg Asp Leu Tyr Ser Ala Leu Ile Gln Phe Phe Gln Ile Phe Pro Glu  
                   180                                  185                                  190  
 Tyr Lys Asn Asn Asp Phe Tyr Val Thr Gly Glu Ser Tyr Ala Gly Lys  
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 Tyr Val Pro Ala Ile Ala His Leu Ile His Ser Leu Asn Pro Val Arg  
                   210                                  215                                  220  
 Glu Val Lys Ile Asn Leu Asn Gly Ile Ala Ile Gly Asp Gly Tyr Ser  
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 Asp Pro Glu Ser Ile Ile Gly Gly Tyr Ala Glu Phe Leu Tyr Gln Ile  
                   245                                  250                                  255  
 Gly Leu Leu Asp Glu Lys Gln Lys Lys Tyr Phe Gln Lys Gln Cys His  
                   260                                  265                                  270  
 Glu Cys Ile Glu His Ile Arg Lys Gln Asn Trp Leu Glu Ala Phe Glu  
                   275                                  280                                  285  
 Ile Leu Asp Lys Leu Leu Asp Gly Asp Leu Thr Ser Asp Pro Ser Tyr  
                   290                                  295                                  300  
 Phe Gln Asn Val Thr Gly Cys Ser Asn Tyr Tyr Asn Phe Leu Arg Cys  
   305                  310                                  315                                  320  
 Thr Glu Pro Glu Asp Gln Leu Tyr Tyr Val Lys Phe Leu Ser Leu Pro  
                   325                                  330                                  335  
 Glu Val Arg Gln Ala Ile His Val Gly Asn Gln Thr Phe Asn Asp Gly  
                   340                                  345                                  350

Thr	Ile	Val	Glu	Lys	Tyr	Leu	Arg	Glu	Asp	Thr	Val	Gln	Ser	Val	Lys
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Pro	Trp	Leu	Thr	Glu	Ile	Met	Asn	Asn	Tyr	Lys	Val	Leu	Ile	Tyr	Asn
	370					375					380				
Gly	Gln	Leu	Asp	Ile	Ile	Val	Ala	Ala	Ala	Leu	Thr	Glu	His	Ser	Leu
385					390					395					400
Met	Gly	Met	Asp	Trp	Lys	Gly	Ser	Gln	Glu	Tyr	Lys	Lys	Ala	Glu	Lys
			405						410					415	
Lys	Val	Trp	Lys	Ile	Leu	Lys	Ser	Asp	Ser	Glu	Val	Ala	Gly	Tyr	Ile
		420						425					430		
Arg	Gln	Ala	Gly	Asp	Ser	His	Gln	Val	Ile	Ile	Arg	Gly	Gly	Gly	His
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 aagctgcgag gatccgggct gcccgcgaga cgaggagcgg gcgccagg atg ggg tcg 177  
 Met Gly Ser  
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atg	aag	tcc	aag	ttc	ctc	cag	gtc	gga	ggc	aat	aca	ttc	tca	aaa	act	225
Met	Lys	Ser	Lys	Phe	Leu	Gln	Val	Gly	Gly	Asn	Thr	Phe	Ser	Lys	Thr	
	5					10					15					

gaa	acc	agc	gcc	agc	cca	cac	tgt	cct	gtg	tac	gtg	ccg	gat	ccc	aca	273
Glu	Thr	Ser	Ala	Ser	Pro	His	Cys	Pro	Val	Tyr	Val	Pro	Asp	Pro	Thr	
	20				25				30						35	

tcc	acc	atc	aag	ccg	ggg	cct	aat	agc	cac	aac	agc	aac	aca	cca	gga	321
Ser	Thr	Ile	Lys	Pro	Gly	Pro	Asn	Ser	His	Asn	Ser	Asn	Thr	Pro	Gly	
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atc	agg	gag	gca	ggc	tct	gag	gac	atc	atc	gtg	gtt	gcc	ctg	tat	gat	369
Ile	Arg	Glu	Ala	Gly	Ser	Glu	Asp	Ile	Ile	Val	Val	Ala	Leu	Tyr	Asp	
			55				60						65			

tac	gag	gcc	att	cac	cac	gaa	gac	ctc	agc	ttc	cag	aag	ggg	gac	cag	417
Tyr	Glu	Ala	Ile	His	His	Glu	Asp	Leu	Ser	Phe	Gln	Lys	Gly	Asp	Gln	
		70					75					80				

atg	gtg	gtc	cta	gag	gaa	tcc	ggg	gag	tgg	tgg	aag	gct	cga	tcc	ctg	465
Met	Val	Val	Leu	Glu	Glu	Ser	Gly	Glu	Trp	Trp	Lys	Ala	Arg	Ser	Leu	
	85					90					95					

gcc	acc	cgg	aag	gag	ggc	tac	atc	cca	agc	aac	tat	gtc	gcc	cgc	gtt	513
Ala	Thr	Arg	Lys	Glu	Gly	Tyr	Ile	Pro	Ser	Asn	Tyr	Val	Ala	Arg	Val	
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gac tct ctg gag aca gag gag tgg ttt ttc aag ggc atc agc cgg aag	561
Asp Ser Leu Glu Thr Glu Glu Trp Phe Phe Lys Gly Ile Ser Arg Lys	
120 125 130	
gac gca gag cgc caa ctg ctg gct ccc ggc aac atg ctg ggc tcc ttc	609
Asp Ala Glu Arg Gln Leu Leu Ala Pro Gly Asn Met Leu Gly Ser Phe	
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atg atc cgg gat agc gag acc act aaa gga agc tac tct ttg tcc gtg	657
Met Ile Arg Asp Ser Glu Thr Thr Lys Gly Ser Tyr Ser Leu Ser Val	
150 155 160	
cga gac tac gac cct cgg cag gga gat acc gtg aaa cat tac aag atc	705
Arg Asp Tyr Asp Pro Arg Gln Gly Asp Thr Val Lys His Tyr Lys Ile	
165 170 175	
cgg acc ctg gac aac ggg ggc ttc tac ata tcc ccc cga agc acc ttc	753
Arg Thr Leu Asp Asn Gly Gly Phe Tyr Ile Ser Pro Arg Ser Thr Phe	
180 185 190 195	
agc act ctg cag gag ctg gtg gac cac tac aag aag ggg aac gac ggg	801
Ser Thr Leu Gln Glu Leu Val Asp His Tyr Lys Lys Gly Asn Asp Gly	
200 205 210	
ctc tgc cag aaa ctg tcg gtg ccc tgc atg tct tcc aag ccc cag aag	849
Leu Cys Gln Lys Leu Ser Val Pro Cys Met Ser Ser Lys Pro Gln Lys	
215 220 225	
cct tgg gag aaa gat gcc tgg gag atc cct cgg gaa tcc ctc aag ctg	897
Pro Trp Glu Lys Asp Ala Trp Glu Ile Pro Arg Glu Ser Leu Lys Leu	
230 235 240	
gag aag aaa ctt gga gct ggg cag ttt ggg gaa gtc tgg atg gcc acc	945
Glu Lys Lys Leu Gly Ala Gly Gln Phe Gly Glu Val Trp Met Ala Thr	
245 250 255	
tac aac aag cac acc aag gtg gca gtg aag acg atg aag cca ggg agc	993
Tyr Asn Lys His Thr Lys Val Ala Val Lys Thr Met Lys Pro Gly Ser	
260 265 270 275	
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Met Ser Val Glu Ala Phe Leu Ala Glu Ala Asn Val Met Lys Thr Leu	
280 285 290	
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Gln His Asp Lys Leu Val Lys Leu His Ala Val Val Thr Lys Glu Pro	
295 300 305	
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Ile Tyr Ile Ile Thr Glu Phe Met Ala Lys Gly Ser Leu Leu Asp Phe	
310 315 320	
ctg aaa agt gat gag ggc agc aag cag cca ttg cca aaa ctc att gac	1185
Leu Lys Ser Asp Glu Gly Ser Lys Gln Pro Leu Pro Lys Leu Ile Asp	
325 330 335	
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340 345 350 355	
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Tyr Ile His Arg Asp Leu Arg Ala Ala Asn Ile Leu Val Ser Ala Ser	

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Leu	Val	Cys	Lys	Ile	Ala	Asp	Phe	Gly	Leu	Ala	Arg	Val	Ile	Glu	Asp					
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gct	cct	gaa	gcc	atc	aac	ttt	ggc	tcc	ttc	acc	atc	aag	tca	gac	gtc	1425				
Ala	Pro	Glu	Ala	Ile	Asn	Phe	Gly	Ser	Phe	Thr	Ile	Lys	Ser	Asp	Val					
			405				410						415							
tgg	tcc	ttt	ggg	atc	ctg	ctg	atg	gag	atc	gtc	acc	tac	ggc	cgg	atc	1473				
Trp	Ser	Phe	Gly	Ile	Leu	Leu	Met	Glu	Ile	Val	Thr	Tyr	Gly	Arg	Ile					
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Pro	Tyr	Pro	Gly	Met	Ser	Asn	Pro	Glu	Val	Ile	Arg	Ala	Leu	Glu	Arg					
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Gly	Tyr	Arg	Met	Pro	Arg	Pro	Glu	Asn	Cys	Pro	Glu	Glu	Leu	Tyr	Asn					
			455				460						465							
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Ile	Met	Met	Arg	Cys	Trp	Lys	Asn	Arg	Pro	Glu	Glu	Arg	Pro	Thr	Phe					
			470				475						480							
gaa	tac	atc	cag	agt	gtg	ctg	gat	gac	ttc	tac	acg	gcc	aca	gag	agc	1665				
Glu	Tyr	Ile	Gln	Ser	Val	Leu	Asp	Asp	Phe	Tyr	Thr	Ala	Thr	Glu	Ser					
			485				490						495							
cag	tac	caa	cag	cag	cca	tga	tagggaggac	cagggcaggg	caggggggtgc						1716					
Gln	Tyr	Gln	Gln	Gln	Pro	*														
			500				505													

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<213> Homo Sapiens

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Thr	Pro	Gly	Ile	Arg	Glu	Ala	Gly	Ser	Glu	Asp	Ile	Ile	Val	Val	Ala
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Gly	Asp	Gln	Met	Val	Val	Leu	Glu	Glu	Ser	Gly	Glu	Trp	Trp	Lys	Ala
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gagaccttga aggaagcctt tgaaaggag a atg aag gag tca tct ttg caa 172
                               Met Lys Glu Ser Ser Leu Gln
                               1           5

aat agc tcc tgc agc ctg gga aag gag act aaa aag gaa aac atg ttc 220
Asn Ser Ser Cys Ser Leu Gly Lys Glu Thr Lys Lys Glu Asn Met Phe
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ctt cag tgc tca atg ctg acc tgc att ttc ctg cta ata tct ggt tcc 268
Leu Gln Ser Ser Met Leu Thr Cys Ile Phe Leu Leu Ile Ser Gly Ser
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Cys Glu Leu Cys Ala Glu Glu Asn Phe Ser Arg Ser Tyr Pro Cys Asp
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Leu Gln Glu Val Pro Gln Thr Val Gly Lys Tyr Val Thr Glu Leu Asp
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Leu Ser Asp Asn Phe Ile Thr His Ile Thr Asn Glu Ser Phe Gln Gly
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Leu Gln Asn Leu Thr Lys Ile Asn Leu Asn His Asn Pro Asn Val Gln
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cac cag aac gga aat ccc ggt ata caa tca aat ggc ttg aat atc aca 556
His Gln Asn Gly Asn Pro Gly Ile Gln Ser Asn Gly Leu Asn Ile Thr
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gac ggg gca ttc ctc aac cta aaa aac cta agg gag tta ctg ctt gaa 604
Asp Gly Ala Phe Leu Asn Leu Lys Asn Leu Arg Glu Leu Leu Leu Glu
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gac aac cag tta ccc caa ata ccc tct ggt ttg cca gag tct ttg aca 652
Asp Asn Gln Leu Pro Gln Ile Pro Ser Gly Leu Pro Glu Ser Leu Thr
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gaa ctt agt cta att caa aac aat ata tac aac ata act aaa gag ggc 700
Glu Leu Ser Leu Ile Gln Asn Asn Ile Tyr Asn Ile Thr Lys Glu Gly
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Ile Ser Arg Leu Ile Asn Leu Lys Asn Leu Tyr Leu Ala Trp Asn Cys
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Tyr Phe Asn Lys Val Cys Glu Lys Thr Asn Ile Glu Asp Gly Val Phe
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gaa acg ctg aca aat ttg gag ttg cta tca cta tct ttc aat tct ctt 844
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				725					730					735	

Leu	Ser	His	Asn	Arg	Ile	Ser	His	Leu	Pro	Ser	Gly	Phe	Leu	Ser	Glu		
			740					745					750				
Val	Ser	Ser	Leu	Lys	His	Leu	Asp	Leu	Ser	Ser	Asn	Leu	Leu	Lys	Thr		
			755				760					765					
Ile	Asn	Lys	Ser	Ala	Leu	Glu	Thr	Lys	Thr	Thr	Thr	Lys	Leu	Ser	Met		
			770			775					780						
Leu	Glu	Leu	His	Gly	Asn	Pro	Phe	Glu	Cys	Thr	Cys	Asp	Ile	Gly	Asp		
785					790				795						800		
Phe	Arg	Arg	Trp	Met	Asp	Glu	His	Leu	Asn	Val	Lys	Ile	Pro	Arg	Leu		
				805					810						815		
Val	Asp	Val	Ile	Cys	Ala	Ser	Pro	Gly	Asp	Gln	Arg	Gly	Lys	Ser	Ile		
			820					825					830				
Val	Ser	Leu	Glu	Leu	Thr	Thr	Cys	Val	Ser	Asp	Val	Thr	Ala	Val	Ile		
			835				840					845					
Leu	Phe	Phe	Phe	Thr	Phe	Phe	Ile	Thr	Thr	Met	Val	Met	Leu	Ala	Ala		
			850			855					860						
Leu	Ala	His	His	Leu	Phe	Tyr	Trp	Asp	Val	Trp	Phe	Ile	Tyr	Asn	Val		
865					870				875						880		
Cys	Leu	Ala	Lys	Ile	Lys	Gly	Tyr	Arg	Ser	Leu	Ser	Thr	Ser	Gln	Thr		
				885					890						895		
Phe	Tyr	Asp	Ala	Tyr	Ile	Ser	Tyr	Asp	Thr	Lys	Asp	Ala	Ser	Val	Thr		
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Asp	Trp	Val	Ile	Asn	Glu	Leu	Arg	Tyr	His	Leu	Glu	Glu	Ser	Arg	Asp		
			915				920					925					
Lys	Asn	Val	Leu	Leu	Cys	Leu	Glu	Glu	Arg	Asp	Trp	Asp	Pro	Gly	Leu		
			930			935					940						
Ala	Ile	Ile	Asp	Asn	Leu	Met	Gln	Ser	Ile	Asn	Gln	Ser	Lys	Lys	Thr		
945					950					955					960		
Val	Phe	Val	Leu	Thr	Lys	Lys	Tyr	Ala	Lys	Ser	Trp	Asn	Phe	Lys	Thr		
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Ala	Phe	Tyr	Leu	Ala	Leu	Gln	Arg	Leu	Met	Asp	Glu	Asn	Met	Asp	Val		
			980					985					990				
Ile	Ile	Phe	Ile	Leu	Leu	Glu	Pro	Val	Leu	Gln	His	Ser	Gln	Tyr	Leu		
			995				1000					1005					
Arg	Leu	Arg	Gln	Arg	Ile	Cys	Lys	Ser	Ser	Ile	Leu	Gln	Trp	Pro	Asp		
			1010			1015					1020						
Asn	Pro	Lys	Ala	Glu	Gly	Leu	Phe	Trp	Gln	Thr	Leu	Arg	Asn	Val	Val		
1025					1030					1035					1040		
Leu	Thr	Glu	Asn	Asp	Ser	Arg	Tyr	Asn	Asn	Met	Tyr	Val	Asp	Ser	Ile		
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<210> 31

<211> 2085

<212> DNA

<213> Homo Sapiens

<220>

<221> CDS

<222> (76)...(1407)

<400> 31

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          Met Asp Phe Pro Cys Leu Trp Leu Gly Leu Leu Leu
                1                      5                      10
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cct ttg gta gct gcg ctg gat ttc aac tac cac cgc cag gaa ggg atg 159
Pro Leu Val Ala Ala Leu Asp Phe Asn Tyr His Arg Gln Glu Gly Met
          15                      20                      25
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gaa gcg ttt ttg aag act gtt gcc caa aac tac agt tct gtc act cac	207
Glu Ala Phe Leu Lys Thr Val Ala Gln Asn Tyr Ser Ser Val Thr His	
30 35 40	
tta cac agt att ggg aaa tct gtg aaa ggt aga aac ctg tgg gtt ctt	255
Leu His Ser Ile Gly Lys Ser Val Lys Gly Arg Asn Leu Trp Val Leu	
45 50 55 60	
gtt gtg ggg cgg ttt cca aag gaa cac aga att ggg att cca gag ttc	303
Val Val Gly Arg Phe Pro Lys Glu His Arg Ile Gly Ile Pro Glu Phe	
65 70 75	
aaa tac gtg gca aat atg cat gga gat gag act gtt ggg cgg gag ctg	351
Lys Tyr Val Ala Asn Met His Gly Asp Glu Thr Val Gly Arg Glu Leu	
80 85 90	
ctg ctc cat ctg att gac tat ctc gta acc agt gat ggc aaa gac cct	399
Leu Leu His Leu Ile Asp Tyr Leu Val Thr Ser Asp Gly Lys Asp Pro	
95 100 105	
gaa atc aca aat ctg atc aat agt acc cgg ata cac atc atg cct tcc	447
Glu Ile Thr Asn Leu Ile Asn Ser Thr Arg Ile His Ile Met Pro Ser	
110 115 120	
atg aac cca gat gga ttt gaa gcc gtc aaa aag cct gac tgt tac tac	495
Met Asn Pro Asp Gly Phe Glu Ala Val Lys Lys Pro Asp Cys Tyr Tyr	
125 130 135 140	
agc atc gga agg gaa aat tat aac cag tat gac ttg aat cga aat ttc	543
Ser Ile Gly Arg Glu Asn Tyr Asn Gln Tyr Asp Leu Asn Arg Asn Phe	
145 150 155	
ccc gat gct ttt gaa tat aat aat gtc tca agg cag cct gaa act gtg	591
Pro Asp Ala Phe Glu Tyr Asn Asn Val Ser Arg Gln Pro Glu Thr Val	
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gca gtc atg aag tgg ctg aaa aca gag acg ttt gtc ctc tct gca aac	639
Ala Val Met Lys Trp Leu Lys Thr Glu Thr Phe Val Leu Ser Ala Asn	
175 180 185	
ctc cat ggt ggt gcc ctc gtg gcc agt tac cca ttt gat aat ggt gtt	687
Leu His Gly Gly Ala Leu Val Ala Ser Tyr Pro Phe Asp Asn Gly Val	
190 195 200	
caa gca act ggg gca tta tac tcc cga agc tta acg cct gat gat gat	735
Gln Ala Thr Gly Ala Leu Tyr Ser Arg Ser Leu Thr Pro Asp Asp Asp	
205 210 215 220	
gtt ttt caa tat ctt gca cat acc tat gct tca aga aat ccc aac atg	783
Val Phe Gln Tyr Leu Ala His Thr Tyr Ala Ser Arg Asn Pro Asn Met	
225 230 235	
aag aaa gga gac gag tgt aaa aac aaa atg aac ttt cct aat ggt gtt	831
Lys Lys Gly Asp Glu Cys Lys Asn Lys Met Asn Phe Pro Asn Gly Val	
240 245 250	
aca aat gga tac tct tgg tat cca ctc caa ggt gga atg caa gat tac	879
Thr Asn Gly Tyr Ser Trp Tyr Pro Leu Gln Gly Gly Met Gln Asp Tyr	
255 260 265	
aac tac atc tgg gcc cag tgt ttt gaa att acg ttg gag ctg tca tgc	927

Asn	Tyr	Ile	Trp	Ala	Gln	Cys	Phe	Glu	Ile	Thr	Leu	Glu	Leu	Ser	Cys		
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tgt	aaa	tat	cct	cgt	gag	gag	aag	ctt	cca	tcc	ttt	tgg	aat	aat	aac	975	
Cys	Lys	Tyr	Pro	Arg	Glu	Glu	Lys	Leu	Pro	Ser	Phe	Trp	Asn	Asn	Asn		
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aaa	gcc	tca	tta	att	gaa	tat	ata	aag	cag	gtg	cac	cta	ggg	gta	aag	1023	
Lys	Ala	Ser	Leu	Ile	Glu	Tyr	Ile	Lys	Gln	Val	His	Leu	Gly	Val	Lys		
			305						310					315			
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Gly	Gln	Val	Phe	Asp	Gln	Asn	Gly	Asn	Pro	Leu	Pro	Asn	Val	Ile	Val		
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gaa	gtc	caa	gac	aga	aaa	cat	atc	tgc	ccc	tat	aga	acc	aac	aaa	tat	1119	
Glu	Val	Gln	Asp	Arg	Lys	His	Ile	Cys	Pro	Tyr	Arg	Thr	Asn	Lys	Tyr		
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Gly	Glu	Tyr	Tyr	Leu	Leu	Leu	Leu	Pro	Gly	Ser	Tyr	Ile	Ile	Asn	Val		
	350				355						360						
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Thr	Val	Pro	Gly	His	Asp	Pro	His	Ile	Thr	Lys	Val	Ile	Ile	Pro	Glu		
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aaa	tcc	cag	aac	ttc	agt	gct	ctt	aaa	aag	gat	att	cta	ctt	cca	ttc	1263	
Lys	Ser	Gln	Asn	Phe	Ser	Ala	Leu	Lys	Lys	Asp	Ile	Leu	Leu	Pro	Phe		
			385						390					395			
caa	ggg	caa	ttg	gat	tct	atc	cca	gta	tca	aat	cct	tca	tgc	cca	atg	1311	
Gln	Gly	Gln	Leu	Asp	Ser	Ile	Pro	Val	Ser	Asn	Pro	Ser	Cys	Pro	Met		
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att	cct	cta	tac	aga	aat	ttg	cca	gac	cac	tca	gct	gca	aca	aag	cct	1359	
Ile	Pro	Leu	Tyr	Arg	Asn	Leu	Pro	Asp	His	Ser	Ala	Ala	Thr	Lys	Pro		
		415					420					425					
agt	ttg	ttc	tta	ttt	tta	gtg	agt	ctt	ttg	cac	ata	ttc	ttc	aaa	taa	1407	
Ser	Leu	Phe	Leu	Phe	Leu	Val	Ser	Leu	Leu	His	Ile	Phe	Phe	Lys	*		
	430					435					440						
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aagaagagaa	atggatgttt	ccaaattcca	caataagcaa	tatgtgggtga	taatgaaaag	1587											
aatgattcag	tcttgacggt	gaatggaaga	cacttaccta	acaagtactg	ctcattttaca	1647											
ctcaaattaa	tcttgaagta	gtcttaaaat	gtgtaagaag	ttaaaacttg	agaagcaaaa	1707											
aatgcctgca	aaaagaagat	catttttgtat	acagagaacc	ggatgaatat	aagcaatgaa	1767											
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tggtggcggg	cacctgtagt	cgcagccttt	cgggaggctg	agacaggaga	atcgcttgaa	2007											
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<210> 32  
 <211> 443  
 <212> PRT  
 <213> Homo Sapiens

<400> 32



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Ala	Leu	Asp	Phe	Asn	Tyr	His	Arg	Gln	Glu	Gly	Met	Glu	Ala	Phe	Leu	20	25	30	
Lys	Thr	Val	Ala	Gln	Asn	Tyr	Ser	Ser	Val	Thr	His	Leu	His	Ser	Ile	35	40	45	
Gly	Lys	Ser	Val	Lys	Gly	Arg	Asn	Leu	Trp	Val	Leu	Val	Val	Gly	Arg	50	55	60	
Phe	Pro	Lys	Glu	His	Arg	Ile	Gly	Ile	Pro	Glu	Phe	Lys	Tyr	Val	Ala	65	70	75	80
Asn	Met	His	Gly	Asp	Glu	Thr	Val	Gly	Arg	Glu	Leu	Leu	Leu	His	Leu	85	90	95	
Ile	Asp	Tyr	Leu	Val	Thr	Ser	Asp	Gly	Lys	Asp	Pro	Glu	Ile	Thr	Asn	100	105	110	
Leu	Ile	Asn	Ser	Thr	Arg	Ile	His	Ile	Met	Pro	Ser	Met	Asn	Pro	Asp	115	120	125	
Gly	Phe	Glu	Ala	Val	Lys	Lys	Pro	Asp	Cys	Tyr	Tyr	Ser	Ile	Gly	Arg	130	135	140	
Glu	Asn	Tyr	Asn	Gln	Tyr	Asp	Leu	Asn	Arg	Asn	Phe	Pro	Asp	Ala	Phe	145	150	155	160
Glu	Tyr	Asn	Asn	Val	Ser	Arg	Gln	Pro	Glu	Thr	Val	Ala	Val	Met	Lys	165	170	175	
Trp	Leu	Lys	Thr	Glu	Thr	Phe	Val	Leu	Ser	Ala	Asn	Leu	His	Gly	Gly	180	185	190	
Ala	Leu	Val	Ala	Ser	Tyr	Pro	Phe	Asp	Asn	Gly	Val	Gln	Ala	Thr	Gly	195	200	205	
Ala	Leu	Tyr	Ser	Arg	Ser	Leu	Thr	Pro	Asp	Asp	Asp	Val	Phe	Gln	Tyr	210	215	220	
Leu	Ala	His	Thr	Tyr	Ala	Ser	Arg	Asn	Pro	Asn	Met	Lys	Lys	Gly	Asp	225	230	235	240
Glu	Cys	Lys	Asn	Lys	Met	Asn	Phe	Pro	Asn	Gly	Val	Thr	Asn	Gly	Tyr	245	250	255	
Ser	Trp	Tyr	Pro	Leu	Gln	Gly	Gly	Met	Gln	Asp	Tyr	Asn	Tyr	Ile	Trp	260	265	270	
Ala	Gln	Cys	Phe	Glu	Ile	Thr	Leu	Glu	Leu	Ser	Cys	Cys	Lys	Tyr	Pro	275	280	285	
Arg	Glu	Glu	Lys	Leu	Pro	Ser	Phe	Trp	Asn	Asn	Asn	Lys	Ala	Ser	Leu	290	295	300	
Ile	Glu	Tyr	Ile	Lys	Gln	Val	His	Leu	Gly	Val	Lys	Gly	Gln	Val	Phe	305	310	315	320
Asp	Gln	Asn	Gly	Asn	Pro	Leu	Pro	Asn	Val	Ile	Val	Glu	Val	Gln	Asp	325	330	335	
Arg	Lys	His	Ile	Cys	Pro	Tyr	Arg	Thr	Asn	Lys	Tyr	Gly	Glu	Tyr	Tyr	340	345	350	
Leu	Leu	Leu	Leu	Pro	Gly	Ser	Tyr	Ile	Ile	Asn	Val	Thr	Val	Pro	Gly	355	360	365	
His	Asp	Pro	His	Ile	Thr	Lys	Val	Ile	Ile	Pro	Glu	Lys	Ser	Gln	Asn	370	375	380	
Phe	Ser	Ala	Leu	Lys	Lys	Asp	Ile	Leu	Leu	Pro	Phe	Gln	Gly	Gln	Leu	385	390	395	400
Asp	Ser	Ile	Pro	Val	Ser	Asn	Pro	Ser	Cys	Pro	Met	Ile	Pro	Leu	Tyr	405	410	415	
Arg	Asn	Leu	Pro	Asp	His	Ser	Ala	Ala	Thr	Lys	Pro	Ser	Leu	Phe	Leu	420	425	430	
Phe	Leu	Val	Ser	Leu	Leu	His	Ile	Phe	Phe	Lys						435	440		

<210> 33

<211> 1408

<212> DNA

<213> Homo Sapiens

<220>

<221> CDS

<222> (104)...(1006)

<400> 33

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                               Met Ala Asn Cys
                               1

gag ttc agc ccg gtg tcc ggg gac aaa ccc tgc tgc cgg ctc tct agg 163
Glu Phe Ser Pro Val Ser Gly Asp Lys Pro Cys Cys Arg Leu Ser Arg
 5                               10                               15                               20

aga gcc caa ctc tgt ctt ggc gtc agt atc ctg gtc ctg atc ctc gtc 211
Arg Ala Gln Leu Cys Leu Gly Val Ser Ile Leu Val Leu Ile Leu Val
                               25                               30                               35

gtg gtg ctc gcg gtg gtc gtc ccg agg tgg cgc cag cag tgg agc ggt 259
Val Val Leu Ala Val Val Val Pro Arg Trp Arg Gln Gln Trp Ser Gly
                               40                               45                               50

ccg ggc acc acc aag cgc ttt ccc gag acc gtc ctg gcg cga tgc gtc 307
Pro Gly Thr Thr Lys Arg Phe Pro Glu Thr Val Leu Ala Arg Cys Val
                               55                               60                               65

aag tac act gaa att cat cct gag atg aga cat gta gac tgc caa agt 355
Lys Tyr Thr Glu Ile His Pro Glu Met Arg His Val Asp Cys Gln Ser
 70                               75                               80

gta tgg gat gct ttc aag ggt gca ttt att tca aaa cat cct tgc aac 403
Val Trp Asp Ala Phe Lys Gly Ala Phe Ile Ser Lys His Pro Cys Asn
 85                               90                               95                               100

att act gaa gaa gac tat cag cca cta atg aag ttg gga act cag acc 451
Ile Thr Glu Glu Asp Tyr Gln Pro Leu Met Lys Leu Gly Thr Gln Thr
                               105                               110                               115

gta cct tgc aac aag att ctt ctt tgg agc aga ata aaa gat ctg gcc 499
Val Pro Cys Asn Lys Ile Leu Leu Trp Ser Arg Ile Lys Asp Leu Ala
                               120                               125                               130

cat cag ttc aca cag gtc cag cgg gac atg ttc acc ctg gag gac acg 547
His Gln Phe Thr Gln Val Gln Arg Asp Met Phe Thr Leu Glu Asp Thr
                               135                               140                               145

ctg cta ggc tac ctt gct gat gac ctc aca tgg tgt ggt gaa ttc aac 595
Leu Leu Gly Tyr Leu Ala Asp Asp Leu Thr Trp Cys Gly Glu Phe Asn
 150                               155                               160

act tcc aaa ata aac tat caa tct tgc cca gac tgg aga aag gac tgc 643
Thr Ser Lys Ile Asn Tyr Gln Ser Cys Pro Asp Trp Arg Lys Asp Cys
 165                               170                               175                               180

agc aac aac cct gtt tca gta ttc tgg aaa acg gtt tcc cgc agg ttt 691
Ser Asn Asn Pro Val Ser Val Phe Trp Lys Thr Val Ser Arg Arg Phe
                               185                               190                               195

gca gaa gct gcc tgt gat gtg gtc cat gtg atg ctc aat gga tcc cgc 739
Ala Glu Ala Ala Cys Asp Val Val His Val Met Leu Asn Gly Ser Arg
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Ser Lys Ile Phe Asp Lys Asn Ser Thr Phe Gly Ser Val Glu Val His
      215                      220                      225

aat ttg caa cca gag aag gtt cag aca cta gag gcc tgg gtg ata cat 835
Asn Leu Gln Pro Glu Lys Val Gln Thr Leu Glu Ala Trp Val Ile His
      230                      235                      240

ggt gga aga gaa gat tcc aga gac tta tgc cag gat ccc acc ata aaa 883
Gly Gly Arg Glu Asp Ser Arg Asp Leu Cys Gln Asp Pro Thr Ile Lys
245                      250                      255                      260

gag ctg gaa tcg att ata agc aaa agg aat att caa ttt tcc tgc aag 931
Glu Leu Glu Ser Ile Ile Ser Lys Arg Asn Ile Gln Phe Ser Cys Lys
      265                      270                      275

aat atc tac aga cct gac aag ttt ctt cag tgt gtg aaa aat cct gag 979
Asn Ile Tyr Arg Pro Asp Lys Phe Leu Gln Cys Val Lys Asn Pro Glu
      280                      285                      290

gat tca tct tgc aca tct gag atc tga gccagtcgct gtgggtgtgtt 1026
Asp Ser Ser Cys Thr Ser Glu Ile *
      295                      300

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agagctgaag attttggagg gtcctccaca ataagggtcaa tgccagagac ggaagccttt 1146
ttccccaag tcttaaaata acttatatca tcagcatacc tttattgtga tctatcaata 1206
gtcaagaaaa attattgtat aagattagaa tgaaaattgt atgttaagtt acttcacttt 1266
aattctcatg tgatcctttt atgttattta tatattggta acatcctttc tattgaaaaa 1326
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<210> 34
<211> 300
<212> PRT
<213> Homo Sapiens

<400> 34
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Leu Ile Leu Val Val Val Leu Ala Val Val Val Pro Arg Trp Arg Gln
      35      40      45
Gln Trp Ser Gly Pro Gly Thr Thr Lys Arg Phe Pro Glu Thr Val Leu
      50      55      60
Ala Arg Cys Val Lys Tyr Thr Glu Ile His Pro Glu Met Arg His Val
      65      70      75      80
Asp Cys Gln Ser Val Trp Asp Ala Phe Lys Gly Ala Phe Ile Ser Lys
      85      90      95
His Pro Cys Asn Ile Thr Glu Glu Asp Tyr Gln Pro Leu Met Lys Leu
      100      105      110
Gly Thr Gln Thr Val Pro Cys Asn Lys Ile Leu Leu Trp Ser Arg Ile
      115      120      125
Lys Asp Leu Ala His Gln Phe Thr Gln Val Gln Arg Asp Met Phe Thr
      130      135      140
Leu Glu Asp Thr Leu Leu Gly Tyr Leu Ala Asp Asp Leu Thr Trp Cys
      145      150      155      160
Gly Glu Phe Asn Thr Ser Lys Ile Asn Tyr Gln Ser Cys Pro Asp Trp
      165      170      175
Arg Lys Asp Cys Ser Asn Asn Pro Val Ser Val Phe Trp Lys Thr Val

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			180					185					190				
Ser	Arg	Arg	Phe	Ala	Glu	Ala	Ala	Cys	Asp	Val	Val	His	Val	Met	Leu		
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Asn	Gly	Ser	Arg	Ser	Lys	Ile	Phe	Asp	Lys	Asn	Ser	Thr	Phe	Gly	Ser		
	210					215					220						
Val	Glu	Val	His	Asn	Leu	Gln	Pro	Glu	Lys	Val	Gln	Thr	Leu	Glu	Ala		
225					230					235					240		
Trp	Val	Ile	His	Gly	Gly	Arg	Glu	Asp	Ser	Arg	Asp	Leu	Cys	Gln	Asp		
				245				250						255			
Pro	Thr	Ile	Lys	Glu	Leu	Glu	Ser	Ile	Ile	Ser	Lys	Arg	Asn	Ile	Gln		
			260					265					270				
Phe	Ser	Cys	Lys	Asn	Ile	Tyr	Arg	Pro	Asp	Lys	Phe	Leu	Gln	Cys	Val		
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Lys	Asn	Pro	Glu	Asp	Ser	Ser	Cys	Thr	Ser	Glu	Ile						
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<210> 35

<211> 769

<212> DNA

<213> Homo Sapiens

<220>

<221> CDS

<222> (16)...(759)

<400> 35

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ttg tgc tcc aga gct gaa gct ggg gag atc atc ggg ggc aca gaa tgc	99
Leu Cys Ser Arg Ala Glu Ala Gly Glu Ile Ile Gly Gly Thr Glu Cys	
15 20 25	
aag cca cat tcc cgc ccc tac atg gcc tac ctg gaa att gta act tcc	147
Lys Pro His Ser Arg Pro Tyr Met Ala Tyr Leu Glu Ile Val Thr Ser	
30 35 40	
aac ggt ccc tca aaa ttt tgt ggt ggt ttc ctt ata aga cgg aac ttt	195
Asn Gly Pro Ser Lys Phe Cys Gly Gly Phe Leu Ile Arg Arg Asn Phe	
45 50 55 60	
gtg ctg acg gct gct cat tgt gca gga agg tct ata aca gtc acc ctt	243
Val Leu Thr Ala Ala His Cys Ala Gly Arg Ser Ile Thr Val Thr Leu	
65 70 75	
gga gcc cat aac ata aca gag gaa gaa gac aca tgg cag aag ctt gag	291
Gly Ala His Asn Ile Thr Glu Glu Glu Asp Thr Trp Gln Lys Leu Glu	
80 85 90	
gtt ata aag caa ttc cgt cat cca aaa tat aac act tct act ctt cac	339
Val Ile Lys Gln Phe Arg His Pro Lys Tyr Asn Thr Ser Thr Leu His	
95 100 105	
cac gat atc atg tta cta aag ttg aag gag aaa gcc agc ctg acc ctg	387
His Asp Ile Met Leu Leu Lys Leu Lys Glu Lys Ala Ser Leu Thr Leu	
110 115 120	
gct gtg ggg aca ctc ccc ttc cca tca caa ttc aac ttt gtc cca cct	435
Ala Val Gly Thr Leu Pro Phe Pro Ser Gln Phe Asn Phe Val Pro Pro	
125 130 135 140	

ggg aga atg tgc cgg gtg gct ggc tgg gga aga aca ggt gtg ttg aag	483
Gly Arg Met Cys Arg Val Ala Gly Trp Gly Arg Thr Gly Val Leu Lys	
145 150 155	
ccg ggc tca gac act ctg caa gag gtg aag ctg aga ctc atg gat ccc	531
Pro Gly Ser Asp Thr Leu Gln Glu Val Lys Leu Arg Leu Met Asp Pro	
160 165 170	
cag gcc tgc agc cac ttc aga gac ttt gac cac aat ctt cag ctg tgt	579
Gln Ala Cys Ser His Phe Arg Asp Phe Asp His Asn Leu Gln Leu Cys	
175 180 185	
gtg ggc aat ccc agg aag aca aaa tct gca ttt aag gga gac tct ggg	627
Val Gly Asn Pro Arg Lys Thr Lys Ser Ala Phe Lys Gly Asp Ser Gly	
190 195 200	
ggc cct ctt ctg tgt gct ggg gtg gcc cag ggc atc gta tcc tat gga	675
Gly Pro Leu Leu Cys Ala Gly Val Ala Gln Gly Ile Val Ser Tyr Gly	
205 210 215 220	
cgg tcg gat gca aag ccc cct gct gtc ttc acc cga atc tcc cat tac	723
Arg Ser Asp Ala Lys Pro Pro Ala Val Phe Thr Arg Ile Ser His Tyr	
225 230 235	
cgg ccc tgg atc aac cag atc ctg cag gca aat taa tcctggatcc	769
Arg Pro Trp Ile Asn Gln Ile Leu Gln Ala Asn *	
240 245	

<210> 36

<211> 247

<212> PRT

<213> Homo Sapiens

<400> 36

Met Leu Leu Leu Pro Leu Pro Leu Leu Leu Phe Leu Leu Cys Ser Arg	
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20 25 30	
Arg Pro Tyr Met Ala Tyr Leu Glu Ile Val Thr Ser Asn Gly Pro Ser	
35 40 45	
Lys Phe Cys Gly Gly Phe Leu Ile Arg Arg Asn Phe Val Leu Thr Ala	
50 55 60	
Ala His Cys Ala Gly Arg Ser Ile Thr Val Thr Leu Gly Ala His Asn	
65 70 75 80	
Ile Thr Glu Glu Glu Asp Thr Trp Gln Lys Leu Glu Val Ile Lys Gln	
85 90 95	
Phe Arg His Pro Lys Tyr Asn Thr Ser Thr Leu His His Asp Ile Met	
100 105 110	
Leu Leu Lys Leu Lys Glu Lys Ala Ser Leu Thr Leu Ala Val Gly Thr	
115 120 125	
Leu Pro Phe Pro Ser Gln Phe Asn Phe Val Pro Pro Gly Arg Met Cys	
130 135 140	
Arg Val Ala Gly Trp Gly Arg Thr Gly Val Leu Lys Pro Gly Ser Asp	
145 150 155 160	
Thr Leu Gln Glu Val Lys Leu Arg Leu Met Asp Pro Gln Ala Cys Ser	
165 170 175	
His Phe Arg Asp Phe Asp His Asn Leu Gln Leu Cys Val Gly Asn Pro	
180 185 190	
Arg Lys Thr Lys Ser Ala Phe Lys Gly Asp Ser Gly Gly Pro Leu Leu	

	195		200		205
Cys	Ala Gly Val Ala Gln Gly	Ile Val Ser Tyr Gly	Arg Ser Asp Ala		
210		215	220		
Lys	Pro Pro Ala Val Phe Thr	Arg Ile Ser His Tyr	Arg Pro Trp Ile		
225		230	235		240
Asn	Gln Ile Leu Gln Ala Asn				
	245				

<210> 37

<211> 1272

<212> DNA

<213> Homo Sapiens

<220>

<221> CDS

<222> (212) ... (1072)

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tcagctgaac ctggatcctg tgcataggca agagctgact ctgagccctg gccagccaa 180  
gctgaccct acactagacc ctacacaccg g atg gag ctg atc ctg agt acc 232

Met Glu Leu Ile Leu Ser Thr  
1 5

agc cca gct gag ctg act ctg gat cct gcg tgc cag cca aag ctg ccc 280  
Ser Pro Ala Glu Leu Thr Leu Asp Pro Ala Cys Gln Pro Lys Leu Pro  
10 15 20

ctg gat tcc aca tgc caa cca gag atg acc ttc aat cct ggt cca act 328  
Leu Asp Ser Thr Cys Gln Pro Glu Met Thr Phe Asn Pro Gly Pro Thr  
25 30 35

gag ctt acc ctg gat cct gaa cac cag cca gag gag acc cca gct cct 376  
Glu Leu Thr Leu Asp Pro Glu His Gln Pro Glu Glu Thr Pro Ala Pro  
40 45 50 55

agc ctg gct gag ttg acc ctg gag cct gtg cac cgc cga ccc gag ctc 424  
Ser Leu Ala Glu Leu Thr Leu Glu Pro Val His Arg Arg Pro Glu Leu  
60 65 70

ctg gat gct tgt gct gac ctc atc aat gat cag tgg ccc cgc agc cgc 472  
Leu Asp Ala Cys Ala Asp Leu Ile Asn Asp Gln Trp Pro Arg Ser Arg  
75 80 85

acc tcc cgc ctg cac tcc ctg ggc cag tcc tca gat gcc ttc ccc ctc 520  
Thr Ser Arg Leu His Ser Leu Gly Gln Ser Ser Asp Ala Phe Pro Leu  
90 95 100

tgc ctg atg ctg cta agc ccc cac ccc aca ctt gaa gca gca ccc gtt 568  
Cys Leu Met Leu Leu Ser Pro His Pro Thr Leu Glu Ala Ala Pro Val  
105 110 115

gtg gtg ggc cat gcc cgc ctg tca cgg gtg ctg aac cag ccc cag agc 616  
Val Val Gly His Ala Arg Leu Ser Arg Val Leu Asn Gln Pro Gln Ser  
120 125 130 135

ctc tta gtg gag aca gtg gtg gtg gcc cgg gcc ctg agg ggc cgt ggc 664  
Leu Leu Val Glu Thr Val Val Val Ala Arg Ala Leu Arg Gly Arg Gly  
140 145 150

ttt ggc cgc cgc ctc atg gag ggc ctg gag gtc ttt gct cgg gcc cgg	712
Phe Gly Arg Arg Leu Met Glu Gly Leu Glu Val Phe Ala Arg Ala Arg	
155 160 165	
ggc ttc cgc aag ctg cat ctc acc acc cat gac cag gtg cac ttc tat	760
Gly Phe Arg Lys Leu His Leu Thr Thr His Asp Gln Val His Phe Tyr	
170 175 180	
acc cac ctg ggc tac cag ctg ggt gag cct gtg cag ggc ctg gtc ttc	808
Thr His Leu Gly Tyr Gln Leu Gly Glu Pro Val Gln Gly Leu Val Phe	
185 190 195	
acc agc aga cgg ctg cct gcc acc ctg ctt aat gcc ttc ccc aca gcc	856
Thr Ser Arg Arg Leu Pro Ala Thr Leu Leu Asn Ala Phe Pro Thr Ala	
200 205 210 215	
ccc tct ccc cgg cca ccc agg aag gcc cca aac ctg act gcc caa gct	904
Pro Ser Pro Arg Pro Pro Arg Lys Ala Pro Asn Leu Thr Ala Gln Ala	
220 225 230	
gcc cca agg ggt ccc aag gga cct cca ttg cca cca ccc cct ccc cta	952
Ala Pro Arg Gly Pro Lys Gly Pro Pro Leu Pro Pro Pro Pro Pro Leu	
235 240 245	
cct gag tgc ctg acc atc tca ccc cca gtt cca tca ggg ccc cct tca	1000
Pro Glu Cys Leu Thr Ile Ser Pro Pro Val Pro Ser Gly Pro Pro Ser	
250 255 260	
aaa agc ctg ctg gag aca caa tat caa aat gtg agg ggg cgc ccc ata	1048
Lys Ser Leu Leu Glu Thr Gln Tyr Gln Asn Val Arg Gly Arg Pro Ile	
265 270 275	
ttc tgg atg gaa aaa gac atc tga ggccatccag ggcaaggaac tgtctttctg	1102
Phe Trp Met Glu Lys Asp Ile *	
280 285	
gttcaataga ctgccccgac agtctacaag cctcagccca ctgaccatac ctcagcccct	1162
agcccctggg gggcagcttt aacctgggca tgtttcctgg gtaccagtgg ggccaggagg	1222
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<210> 38

<211> 286

<212> PRT

<213> Homo Sapiens

<400> 38

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Thr Phe Asn Pro Gly Pro Thr Glu Leu Thr Leu Asp Pro Glu His Gln	
35 40 45	
Pro Glu Glu Thr Pro Ala Pro Ser Leu Ala Glu Leu Thr Leu Glu Pro	
50 55 60	
Val His Arg Arg Pro Glu Leu Leu Asp Ala Cys Ala Asp Leu Ile Asn	
65 70 75 80	
Asp Gln Trp Pro Arg Ser Arg Thr Ser Arg Leu His Ser Leu Gly Gln	
85 90 95	
Ser Ser Asp Ala Phe Pro Leu Cys Leu Met Leu Leu Ser Pro His Pro	
100 105 110	
Thr Leu Glu Ala Ala Pro Val Val Val Gly His Ala Arg Leu Ser Arg	
115 120 125	

Val	Leu	Asn	Gln	Pro	Gln	Ser	Leu	Leu	Val	Glu	Thr	Val	Val	Val	Ala	
	130					135					140					
Arg	Ala	Leu	Arg	Gly	Arg	Gly	Phe	Gly	Arg	Arg	Leu	Met	Glu	Gly	Leu	
145					150					155						160
Glu	Val	Phe	Ala	Arg	Ala	Arg	Gly	Phe	Arg	Lys	Leu	His	Leu	Thr	Thr	
				165					170					175		
His	Asp	Gln	Val	His	Phe	Tyr	Thr	His	Leu	Gly	Tyr	Gln	Leu	Gly	Glu	
		180						185					190			
Pro	Val	Gln	Gly	Leu	Val	Phe	Thr	Ser	Arg	Arg	Leu	Pro	Ala	Thr	Leu	
	195						200					205				
Leu	Asn	Ala	Phe	Pro	Thr	Ala	Pro	Ser	Pro	Arg	Pro	Pro	Arg	Lys	Ala	
	210					215				220						
Pro	Asn	Leu	Thr	Ala	Gln	Ala	Ala	Pro	Arg	Gly	Pro	Lys	Gly	Pro	Pro	
225					230					235						240
Leu	Pro	Pro	Pro	Pro	Pro	Leu	Pro	Glu	Cys	Leu	Thr	Ile	Ser	Pro	Pro	
				245					250					255		
Val	Pro	Ser	Gly	Pro	Pro	Ser	Lys	Ser	Leu	Leu	Glu	Thr	Gln	Tyr	Gln	
			260					265					270			
Asn	Val	Arg	Gly	Arg	Pro	Ile	Phe	Trp	Met	Glu	Lys	Asp	Ile			
	275						280					285				

<210> 39  
 <211> 3386  
 <212> DNA  
 <213> Homo Sapiens

<220>  
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 <222> (223)...(1410)

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 ttgaaagaag aagaagaaga agaagaagaa aaaaaaactc aggcaaagtc acagcctcaa 180  
 aattgttcac tgaaagaagc gtgagtgagg aagtgtgaga ag atg aat gga ccg 234  
 Met Asn Gly Pro  
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gtg	gat	ggc	ttg	tgt	gac	cac	tct	cta	agt	gaa	gga	gtc	ttc	atg	ttc	282
Val	Asp	Gly	Leu	Cys	Asp	His	Ser	Leu	Ser	Glu	Gly	Val	Phe	Met	Phe	
5					10					15					20	

aca	tcg	gag	tct	gtg	gga	gag	gga	cac	ccg	gat	aag	atc	tgt	gac	cag	330
Thr	Ser	Glu	Ser	Val	Gly	Glu	Gly	His	Pro	Asp	Lys	Ile	Cys	Asp	Gln	
			25					30						35		

atc	agt	gat	gca	gtg	ctg	gat	gcc	cat	ctc	aag	caa	gac	ccc	aat	gcc	378
Ile	Ser	Asp	Ala	Val	Leu	Asp	Ala	His	Leu	Lys	Gln	Asp	Pro	Asn	Ala	
			40					45					50			

aag	gtg	gcc	tgt	gag	aca	gtg	tgc	aag	acc	ggc	atg	gtg	ctg	ctg	tgt	426
Lys	Val	Ala	Cys	Glu	Thr	Val	Cys	Lys	Thr	Gly	Met	Val	Leu	Leu	Cys	
		55					60					65				

ggg	gag	atc	acc	tca	atg	gcc	atg	gtg	gac	tac	cag	cgg	gtg	gtg	agg	474
Gly	Glu	Ile	Thr	Ser	Met	Ala	Met	Val	Asp	Tyr	Gln	Arg	Val	Val	Arg	
	70					75					80					

gac	acc	atc	aag	cac	atc	ggc	tac	gat	gac	tca	gcc	aag	ggc	ttt	gac	522
Asp	Thr	Ile	Lys	His	Ile	Gly	Tyr	Asp	Asp	Ser	Ala	Lys	Gly	Phe	Asp	
	85				90					95					100	



ttc aag act tgc aac gtg ctg gtg gct ttg gag cag caa tcc cca gat	570
Phe Lys Thr Cys Asn Val Leu Val Ala Leu Glu Gln Gln Ser Pro Asp	
105 110 115	
att gcc cag tgc gtc cat ctg gac aga aat gag gag gat gtg ggg gca	618
Ile Ala Gln Cys Val His Leu Asp Arg Asn Glu Glu Asp Val Gly Ala	
120 125 130	
gga gat cag ggt ttg atg ttc ggc tat gcc acc gac gag aca gag gag	666
Gly Asp Gln Gly Leu Met Phe Gly Tyr Ala Thr Asp Glu Thr Glu Glu	
135 140 145	
tgc atg ccc ctc acc atc atc ctt gct cac aag ctc aac gcc cgg atg	714
Cys Met Pro Leu Thr Ile Ile Leu Ala His Lys Leu Asn Ala Arg Met	
150 155 160	
gca gac ctc agg cgc tcc ggc ctc ctc ccc tgg ctg cgg cct gac tct	762
Ala Asp Leu Arg Arg Ser Gly Leu Leu Pro Trp Leu Arg Pro Asp Ser	
165 170 175 180	
aag act cag gtg aca gtt cag tac atg cag gac aat ggc gca gtc atc	810
Lys Thr Gln Val Thr Val Gln Tyr Met Gln Asp Asn Gly Ala Val Ile	
185 190 195	
cct gtg cgc atc cac acc atc gtc atc tct gtg cag cac aac gaa gac	858
Pro Val Arg Ile His Thr Ile Val Ile Ser Val Gln His Asn Glu Asp	
200 205 210	
atc acg ctg gag gag atg cgc agg gcc ctg aag gag caa gtc atc agg	906
Ile Thr Leu Glu Glu Met Arg Arg Ala Leu Lys Glu Gln Val Ile Arg	
215 220 225	
gcc gtg gtg ccg gcc aag tac ctg gac gaa gac acc gtc tac cac ctg	954
Ala Val Val Pro Ala Lys Tyr Leu Asp Glu Asp Thr Val Tyr His Leu	
230 235 240	
cag ccc agt ggg cgg ttt gtc atc gga ggt ccc cag ggg gat gcg ggt	1002
Gln Pro Ser Gly Arg Phe Val Ile Gly Gly Pro Gln Gly Asp Ala Gly	
245 250 255 260	
gtc act ggc cgt aag att att gtg gac acc tat ggc ggc tgg ggg gct	1050
Val Thr Gly Arg Lys Ile Ile Val Asp Thr Tyr Gly Gly Trp Gly Ala	
265 270 275	
cat ggt ggt ggg gcc ttc tct ggg aag gac tac acc aag gtg gac cgc	1098
His Gly Gly Gly Ala Phe Ser Gly Lys Asp Tyr Thr Lys Val Asp Arg	
280 285 290	
tca gcc gct tat gct gcc cgc tgg gtg gcc aag tct ctg gtg aaa gca	1146
Ser Ala Ala Tyr Ala Ala Arg Trp Val Ala Lys Ser Leu Val Lys Ala	
295 300 305	
ggg ctc tgc cgg aga gtg ctt gtc cag gtt tcc tat gcc att ggt gtg	1194
Gly Leu Cys Arg Arg Val Leu Val Gln Val Ser Tyr Ala Ile Gly Val	
310 315 320	
gcc gag ccg ctg tcc att tcc atc ttc acc tac gga acc tct cag aag	1242
Ala Glu Pro Leu Ser Ile Ser Ile Phe Thr Tyr Gly Thr Ser Gln Lys	
325 330 335 340	
aca gag cga gag ctg ctg gat gtg gtg cat aag aac ttc gac ctc cgg	1290

Thr	Glu	Arg	Glu	Leu	Leu	Asp	Val	Val	His	Lys	Asn	Phe	Asp	Leu	Arg	
				345					350					355		
ccg	ggc	gtc	att	gtc	agg	gat	ttg	gac	ttg	aag	aag	ccc	atc	tac	cag	1338
Pro	Gly	Val	Ile	Val	Arg	Asp	Leu	Asp	Leu	Lys	Lys	Pro	Ile	Tyr	Gln	
			360					365					370			
aag	aca	gca	tgc	tac	ggc	cat	ttc	gga	aga	agc	gag	ttc	cca	tgg	gag	1386
Lys	Thr	Ala	Cys	Tyr	Gly	His	Phe	Gly	Arg	Ser	Glu	Phe	Pro	Trp	Glu	
		375					380					385				
gtt	ccc	agg	aag	ctt	gta	ttt	tag	agccagggggg	agctgggcct	ggtctcacc						1440
Val	Pro	Arg	Lys	Leu	Val	Phe	*									
		390				395										

  

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gcaacatgat	gaggtagtac	cttttatatc	ccatttatag	atgggggaaa	gcaaagcaca	2040
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tcagaatttt	atactttccc	taccctctag	agaaataaga	tcttttttgt	cagtttgttt	3300
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 <212> PRT  
 <213> Homo Sapiens

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 35 40 45  
 Asp Pro Asn Ala Lys Val Ala Cys Glu Thr Val Cys Lys Thr Gly Met

50	55	60			
Val Leu Leu Cys Gly Glu Ile Thr Ser Met Ala Met Val Asp Tyr Gln					
65	70	75	80		
Arg Val Val Arg Asp Thr Ile Lys His Ile Gly Tyr Asp Asp Ser Ala					
	85	90	95		
Lys Gly Phe Asp Phe Lys Thr Cys Asn Val Leu Val Ala Leu Glu Gln					
	100	105	110		
Gln Ser Pro Asp Ile Ala Gln Cys Val His Leu Asp Arg Asn Glu Glu					
	115	120	125		
Asp Val Gly Ala Gly Asp Gln Gly Leu Met Phe Gly Tyr Ala Thr Asp					
	130	135	140		
Glu Thr Glu Glu Cys Met Pro Leu Thr Ile Ile Leu Ala His Lys Leu					
	145	150	155	160	
Asn Ala Arg Met Ala Asp Leu Arg Arg Ser Gly Leu Leu Pro Trp Leu					
	165	170	175	180	
Arg Pro Asp Ser Lys Thr Gln Val Thr Val Gln Tyr Met Gln Asp Asn					
	180	185	190	195	
Gly Ala Val Ile Pro Val Arg Ile His Thr Ile Val Ile Ser Val Gln					
	195	200	205	210	
His Asn Glu Asp Ile Thr Leu Glu Glu Met Arg Arg Ala Leu Lys Glu					
	210	215	220	225	
Gln Val Ile Arg Ala Val Val Pro Ala Lys Tyr Leu Asp Glu Asp Thr					
	225	230	235	240	
Val Tyr His Leu Gln Pro Ser Gly Arg Phe Val Ile Gly Gly Pro Gln					
	245	250	255	260	
Gly Asp Ala Gly Val Thr Gly Arg Lys Ile Ile Val Asp Thr Tyr Gly					
	260	265	270	275	
Gly Trp Gly Ala His Gly Gly Gly Ala Phe Ser Gly Lys Asp Tyr Thr					
	275	280	285	290	
Lys Val Asp Arg Ser Ala Ala Tyr Ala Ala Arg Trp Val Ala Lys Ser					
	290	295	300	305	
Leu Val Lys Ala Gly Leu Cys Arg Arg Val Leu Val Gln Val Ser Tyr					
	305	310	315	320	
Ala Ile Gly Val Ala Glu Pro Leu Ser Ile Ser Ile Phe Thr Tyr Gly					
	325	330	335	340	
Thr Ser Gln Lys Thr Glu Arg Glu Leu Leu Asp Val Val His Lys Asn					
	340	345	350	355	
Phe Asp Leu Arg Pro Gly Val Ile Val Arg Asp Leu Asp Leu Lys Lys					
	355	360	365	370	
Pro Ile Tyr Gln Lys Thr Ala Cys Tyr Gly His Phe Gly Arg Ser Glu					
	370	375	380	385	
Phe Pro Trp Glu Val Pro Arg Lys Leu Val Phe					
	385	390	395		

<210> 41

<211> 4170

<212> DNA

<213> Homo Sapiens

<220>

<221> CDS

<222> (101)...(4117)

<400> 41

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                                     Met Asp Arg Ala Ser
                                     1 5

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gag ctg ctc ttc tac gtg aac ggc cgc aag gtg ata gaa aaa aat gtc 163
Glu Leu Leu Phe Tyr Val Asn Gly Arg Lys Val Ile Glu Lys Asn Val

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10					15					20						
gat	cct	gaa	aca	atg	ctg	ttg	cct	tat	ttg	agg	aag	aag	ctt	cga	ctc	211
Asp	Pro	Glu	Thr	Met	Leu	Leu	Pro	Tyr	Leu	Arg	Lys	Lys	Leu	Arg	Leu	
			25					30					35			
aca	gga	act	aag	tat	ggc	tgt	gga	gga	gga	ggc	tgt	ggt	gct	tgt	aca	259
Thr	Gly	Thr	Lys	Tyr	Gly	Cys	Gly	Gly	Gly	Gly	Cys	Gly	Ala	Cys	Thr	
		40					45					50				
gtg	atg	ata	tca	cga	tac	aac	ccc	atc	acc	aag	agg	ata	agg	cat	cac	307
Val	Met	Ile	Ser	Arg	Tyr	Asn	Pro	Ile	Thr	Lys	Arg	Ile	Arg	His	His	
	55					60					65					
cca	gcc	aat	gcc	tgt	ctg	att	ccc	atc	tgt	tct	ctg	tat	ggt	gct	gcc	355
Pro	Ala	Asn	Ala	Cys	Leu	Ile	Pro	Ile	Cys	Ser	Leu	Tyr	Gly	Ala	Ala	
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gtc	acc	aca	gta	gaa	ggc	ata	gga	agc	acc	cac	acc	aga	att	cat	cct	403
Val	Thr	Thr	Val	Glu	Gly	Ile	Gly	Ser	Thr	His	Thr	Arg	Ile	His	Pro	
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Val	Gln	Glu	Arg	Ile	Ala	Lys	Cys	His	Gly	Thr	Gln	Cys	Gly	Phe	Cys	
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Thr	Pro	Gly	Met	Val	Met	Ser	Ile	Tyr	Thr	Leu	Leu	Arg	Asn	His	Pro	
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Glu	Pro	Thr	Leu	Asp	Gln	Leu	Thr	Asp	Ala	Leu	Gly	Gly	Asn	Leu	Cys	
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cgt	tgc	act	gga	tac	agg	ccc	ata	att	gat	gca	tgc	aag	act	ttc	tgt	595
Arg	Cys	Thr	Gly	Tyr	Arg	Pro	Ile	Ile	Asp	Ala	Cys	Lys	Thr	Phe	Cys	
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aaa	act	tcg	ggc	tgc	tgt	caa	agt	aaa	gaa	aat	ggg	gtt	tgc	tgt	ttg	643
Lys	Thr	Ser	Gly	Cys	Cys	Gln	Ser	Lys	Glu	Asn	Gly	Val	Cys	Cys	Leu	
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gat	caa	gga	atc	aat	gga	ttg	cca	gaa	ttt	gag	gaa	gga	agt	aag	aca	691
Asp	Gln	Gly	Ile	Asn	Gly	Leu	Pro	Glu	Phe	Glu	Glu	Gly	Ser	Lys	Thr	
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agt	cca	aaa	ctc	ttc	gca	gaa	gag	gag	ttt	ctg	cca	ttg	gat	cca	acc	739
Ser	Pro	Lys	Leu	Phe	Ala	Glu	Glu	Glu	Phe	Leu	Pro	Leu	Asp	Pro	Thr	
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cag	gaa	ctg	ata	ttt	cct	cct	gag	cta	atg	ata	atg	gct	gag	aaa	cag	787
Gln	Glu	Leu	Ile	Phe	Pro	Pro	Glu	Leu	Met	Ile	Met	Ala	Glu	Lys	Gln	
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tcg	caa	agg	acc	agg	gtg	ttt	ggc	agt	gag	aga	atg	atg	tgg	ttt	tcc	835
Ser	Gln	Arg	Thr	Arg	Val	Phe	Gly	Ser	Glu	Arg	Met	Met	Trp	Phe	Ser	
	230				235				240					245		
ccc	gtg	acc	ctg	aag	gaa	ctg	ctg	gaa	ttt	aaa	ttc	aag	tat	ccc	cag	883
Pro	Val	Thr	Leu	Lys	Glu	Leu	Leu	Glu	Phe	Lys	Phe	Lys	Tyr	Pro	Gln	
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Ala Pro Val Ile Met Gly Asn Thr Ser Val Gly Pro Glu Val Lys Phe	
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Lys Gly Val Phe His Pro Val Ile Ile Ser Pro Asp Arg Ile Glu Glu	
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Leu Ser Val Val Asn His Ala Tyr Asn Gly Leu Thr Leu Gly Ala Gly	
295 300 305	
ctc agc cta gcc cag gtg aag gac att ttg gct gat gta gtc cag aag	1075
Leu Ser Leu Ala Gln Val Lys Asp Ile Leu Ala Asp Val Val Gln Lys	
310 315 320 325	
ctt cca gag gag aag aca cag atg tac cat gct ctc ctg aag cat ttg	1123
Leu Pro Glu Glu Lys Thr Gln Met Tyr His Ala Leu Leu Lys His Leu	
330 335 340	
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Gly Thr Leu Ala Gly Ser Gln Ile Arg Asn Met Ala Ser Leu Gly Gly	
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cac atc att agc agg cat cca gat tca gat ctg aat ccc atc ctg gct	1219
His Ile Ile Ser Arg His Pro Asp Ser Asp Leu Asn Pro Ile Leu Ala	
360 365 370	
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Val Gly Asn Cys Thr Leu Asn Leu Leu Ser Lys Glu Gly Lys Arg Gln	
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Ile Pro Leu Asn Glu Gln Phe Leu Ser Lys Cys Pro Asn Ala Asp Leu	
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Lys Pro Gln Glu Ile Leu Val Ser Val Asn Ile Pro Tyr Ser Arg Lys	
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Trp Glu Phe Val Ser Ala Phe Arg Gln Ala Gln Arg Gln Glu Asn Ala	
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Leu Ala Ile Val Asn Ser Gly Met Arg Val Phe Phe Gly Glu Gly Asp	
440 445 450	
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Gly Ile Ile Arg Glu Leu Cys Ile Ser Tyr Gly Gly Val Gly Pro Ala	
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Thr Ile Cys Ala Lys Asn Ser Cys Gln Lys Leu Ile Gly Arg His Trp	
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Asn Glu Gln Met Leu Asp Ile Ala Cys Arg Leu Ile Leu Asn Glu Val	
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Ser Leu Leu Gly Ser Ala Pro Gly Gly Lys Val Glu Phe Lys Arg Thr	

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Leu	Ile	Ile	Ser	Phe	Leu	Phe	Lys	Phe	Tyr	Leu	Glu	Val	Ser	Gln	Ile	
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ttg	aaa	aag	atg	gat	cca	gtt	cac	tat	cct	agc	ctt	gca	gac	aag	tat	1747
Leu	Lys	Lys	Met	Asp	Pro	Val	His	Tyr	Pro	Ser	Leu	Ala	Asp	Lys	Tyr	
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gaa	agt	gct	tta	gaa	gat	ctt	cat	tcc	aaa	cat	cac	tgc	agt	aca	tta	1795
Glu	Ser	Ala	Leu	Glu	Asp	Leu	His	Ser	Lys	His	His	Cys	Ser	Thr	Leu	
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Lys	Tyr	Gln	Asn	Ile	Gly	Pro	Lys	Gln	His	Pro	Glu	Asp	Pro	Ile	Gly	
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His	Pro	Ile	Met	His	Leu	Ser	Gly	Val	Lys	His	Ala	Thr	Gly	Glu	Ala	
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Ile	Tyr	Cys	Asp	Asp	Met	Pro	Leu	Val	Asp	Gln	Glu	Leu	Phe	Leu	Thr	
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ttt	gtg	act	agt	tca	aga	gct	cat	gct	aag	att	gtg	tct	att	gat	ctg	1987
Phe	Val	Thr	Ser	Ser	Arg	Ala	His	Ala	Lys	Ile	Val	Ser	Ile	Asp	Leu	
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tca	gaa	gct	ctc	agc	atg	ccc	ggt	gtg	gtg	gac	atc	atg	aca	gca	gaa	2035
Ser	Glu	Ala	Leu	Ser	Met	Pro	Gly	Val	Val	Asp	Ile	Met	Thr	Ala	Glu	
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cat	ctt	agt	gac	gtc	aac	tcc	ttc	tgc	ttt	ttt	act	gaa	gct	gag	aaa	2083
His	Leu	Ser	Asp	Val	Asn	Ser	Phe	Cys	Phe	Phe	Thr	Glu	Ala	Glu	Lys	
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Phe	Leu	Ala	Thr	Asp	Lys	Val	Phe	Cys	Val	Gly	Gln	Leu	Val	Cys	Ala	
			665					670					675			
gtg	ctt	gcc	gat	tct	gag	gtt	cag	gca	aag	cga	gct	gct	aag	cga	gtg	2179
Val	Leu	Ala	Asp	Ser	Glu	Val	Gln	Ala	Lys	Arg	Ala	Ala	Lys	Arg	Val	
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Lys	Ile	Val	Tyr	Gln	Asp	Leu	Glu	Pro	Leu	Ile	Leu	Thr	Ile	Glu	Glu	
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Ser	Ile	Gln	His	Asn	Ser	Ser	Phe	Lys	Pro	Glu	Arg	Lys	Leu	Glu	Tyr	
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Gly	Asn	Val	Asp	Glu	Ala	Phe	Lys	Val	Val	Asp	Gln	Ile	Leu	Glu	Gly	
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gaa	ata	cat	atg	gga	ggg	caa	gaa	cat	ttt	tat	atg	gaa	acc	caa	agc	2371
Glu	Ile	His	Met	Gly	Gly	Gln	Glu	His	Phe	Tyr	Met	Glu	Thr	Gln	Ser	
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Ser Thr Gln Phe Pro Lys Tyr Ile Gln Asp Ile Val Ala Ser Thr Leu	
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Lys Leu Pro Ala Asn Lys Val Met Cys His Val Arg Arg Val Gly Gly	
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Ala Phe Gly Gly Lys Val Leu Lys Thr Gly Ile Ile Ala Ala Val Thr	
810 815 820	
gca ttt gcc gca aac aaa cat ggc cgt gca gtt cgc tgt gtt ctg gaa	2611
Ala Phe Ala Ala Asn Lys His Gly Arg Ala Val Arg Cys Val Leu Glu	
825 830 835	
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Arg Gly Glu Asp Met Leu Ile Thr Gly Gly Arg His Pro Tyr Leu Gly	
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Lys Tyr Lys Ala Gly Phe Met Asn Asp Gly Arg Ile Leu Ala Leu Asp	
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Met Glu His Tyr Ser Asn Ala Gly Ala Ser Leu Asp Glu Ser Leu Phe	
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Val Ile Glu Met Gly Leu Leu Lys Met Asp Asn Ala Tyr Lys Phe Pro	
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Asn Leu Arg Cys Arg Gly Trp Ala Cys Arg Thr Asn Leu Pro Ser Asn	
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Gln Glu Ile Asn Ala Lys Asn Leu Ile Gln Cys Trp Arg Glu Cys Met	
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gcc atg tct tcc tac tcc ttg agg aaa gtt gct gtg gaa aag ttc aat	3091
Ala Met Ser Ser Tyr Ser Leu Arg Lys Val Ala Val Glu Lys Phe Asn	
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gca gag aat tat tgg aag aag aaa gga ctg gcc atg gtc ccc ctg aag	3139
Ala Glu Asn Tyr Trp Lys Lys Lys Gly Leu Ala Met Val Pro Leu Lys	

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Thr Arg Ile His Pro Val Gln Glu Arg Ile Ala Lys Cys His Gly Thr  
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Pro	Glu	Val	Lys	Phe	Lys	Gly	Val	Phe	His	Pro	Val	Ile	Ile	Ser	Pro
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Asp	Arg	Ile	Glu	Glu	Leu	Ser	Val	Val	Asn	His	Ala	Tyr	Asn	Gly	Leu
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Ala	Ser	Leu	Gly	Gly	His	Ile	Ile	Ser	Arg	His	Pro	Asp	Ser	Asp	Leu
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His	Cys	Ser	Thr	Leu	Lys	Tyr	Gln	Asn	Ile	Gly	Pro	Lys	Gln	His	Pro
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Glu	Asp	Pro	Ile	Gly	His	Pro	Ile	Met	His	Leu	Ser	Gly	Val	Lys	His
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Ala	Thr	Gly	Glu	Ala	Ile	Tyr	Cys	Asp	Asp	Met	Pro	Leu	Val	Asp	Gln
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Glu	Leu	Phe	Leu	Thr	Phe	Val	Thr	Ser	Ser	Arg	Ala	His	Ala	Lys	Ile
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Ile	Met	Thr	Ala	Glu	His	Leu	Ser	Asp	Val	Asn	Ser	Phe	Cys	Phe	Phe
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			660					665					670		
Gln	Leu	Val	Cys	Ala	Val	Leu	Ala	Asp	Ser	Glu	Val	Gln	Ala	Lys	Arg
		675					680					685			
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		690				695					700				
Leu	Thr	Ile	Glu	Glu	Ser	Ile	Gln	His	Asn	Ser	Ser	Phe	Lys	Pro	Glu
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Arg	Lys	Leu	Glu	Tyr	Gly	Asn	Val	Asp	Glu	Ala	Phe	Lys	Val	Val	Asp
				725					730					735	

Gln	Ile	Leu	Glu	Gly	Glu	Ile	His	Met	Gly	Gly	Gln	Glu	His	Phe	Tyr		
			740					745					750				
Met	Glu	Thr	Gln	Ser	Met	Leu	Val	Val	Pro	Lys	Gly	Glu	Asp	Gln	Glu		
			755				760					765					
Met	Asp	Val	Tyr	Val	Ser	Thr	Gln	Phe	Pro	Lys	Tyr	Ile	Gln	Asp	Ile		
			770			775					780						
Val	Ala	Ser	Thr	Leu	Lys	Leu	Pro	Ala	Asn	Lys	Val	Met	Cys	His	Val		
785					790					795					800		
Arg	Arg	Val	Gly	Gly	Ala	Phe	Gly	Gly	Lys	Val	Leu	Lys	Thr	Gly	Ile		
			805						810					815			
Ile	Ala	Ala	Val	Thr	Ala	Phe	Ala	Ala	Asn	Lys	His	Gly	Arg	Ala	Val		
			820					825					830				
Arg	Cys	Val	Leu	Glu	Arg	Gly	Glu	Asp	Met	Leu	Ile	Thr	Gly	Gly	Arg		
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His	Pro	Tyr	Leu	Gly	Lys	Tyr	Lys	Ala	Gly	Phe	Met	Asn	Asp	Gly	Arg		
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865					870					875					880		
Asp	Glu	Ser	Leu	Phe	Val	Ile	Glu	Met	Gly	Leu	Leu	Lys	Met	Asp	Asn		
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Ala	Tyr	Lys	Phe	Pro	Asn	Leu	Arg	Cys	Arg	Gly	Trp	Ala	Cys	Arg	Thr		
			900					905					910				
Asn	Leu	Pro	Ser	Asn	Thr	Ala	Phe	Arg	Gly	Phe	Gly	Phe	Pro	Gln	Ala		
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Ala	Leu	Ile	Thr	Glu	Ser	Cys	Ile	Thr	Glu	Val	Ala	Ala	Lys	Cys	Gly		
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Leu	Ser	Pro	Glu	Lys	Val	Arg	Ile	Ile	Asn	Met	Tyr	Lys	Glu	Ile	Asp		
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Gln	Thr	Pro	Tyr	Lys	Gln	Glu	Ile	Asn	Ala	Lys	Asn	Leu	Ile	Gln	Cys		
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Trp	Arg	Glu	Cys	Met	Ala	Met	Ser	Ser	Tyr	Ser	Leu	Arg	Lys	Val	Ala		
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Val	Glu	Lys	Phe	Asn	Ala	Glu	Asn	Tyr	Trp	Lys	Lys	Lys	Gly	Leu	Ala		
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Thr	His	Gly	Gly	Ile	Glu	Met	Gly	Gln	Gly	Val	His	Thr	Lys	Met	Ile		
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Gln	Val	Val	Ser	Arg	Glu	Leu	Arg	Met	Pro	Met	Ser	Asn	Val	His	Leu		
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Arg	Gly	Thr	Ser	Thr	Glu	Thr	Val	Pro	Asn	Ala	Asn	Ile	Ser	Gly	Gly		
			1075				1080					1085					
Ser	Val	Val	Ala	Asp	Leu	Asn	Gly	Leu	Ala	Val	Lys	Asp	Ala	Cys	Gln		
			1090			1095					1100						
Thr	Leu	Leu	Lys	Arg	Leu	Glu	Pro	Ile	Ile	Ser	Lys	Asn	Pro	Lys	Gly		
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Thr	Trp	Lys	Asp	Trp	Ala	Gln	Thr	Ala	Phe	Asp	Glu	Ser	Ile	Asn	Leu		
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Ser	Ala	Val	Gly	Tyr	Phe	Arg	Gly	Tyr	Glu	Ser	Asp	Met	Asn	Trp	Glu		
			1140					1145					1150				
Lys	Gly	Glu	Gly	Gln	Pro	Phe	Glu	Tyr	Phe	Val	Tyr	Gly	Ala	Ala	Cys		
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Ser	Glu	Val	Glu	Ile	Asp	Cys	Leu	Thr	Gly	Asp	His	Lys	Asn	Ile	Arg		
			1170			1175					1180						
Thr	Asp	Ile	Val	Met	Asp	Val	Gly	Cys	Ser	Ile	Asn	Pro	Ala	Ile	Asp		
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Ser Lys Gly Leu Gly Glu Ser Gly Val Phe Leu Gly Cys Ser Val Phe  
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Phe Ala Ile His Asp Ala Val Ser Ala Ala Arg Gln Glu Arg Gly Leu  
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His Gly Pro Leu Thr Leu Asn Ser Pro Leu Thr Pro Glu Lys Ile Arg  
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Leu Arg Gln Leu Gln Arg Ala Ala Cys Gln Cys Pro Thr His Ser His  
15 20 25  
act tac tcc caa gcc cct gga ctt tca cct tct ggg aaa aca aca gat 146  
Thr Tyr Ser Gln Ala Pro Gly Leu Ser Pro Ser Gly Lys Thr Thr Asp  
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Tyr Ala Phe Glu Met Ala Val Ser Asn Ile Arg Tyr Gly Ala Ala Val  
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Thr Lys Glu Val Gly Met Asp Leu Lys Asn Met Gly Ala Lys Asn Val  
65 70 75  
tgc ttg atg aca gac aag aac ctc tcc aag ctc cct cct gtg caa gta 290  
Cys Leu Met Thr Asp Lys Asn Leu Ser Lys Leu Pro Pro Val Gln Val  
80 85 90  
gct atg gat tcc cta gtg aag aat ggc atc ccc ttt acg gtt tat gat 338  
Ala Met Asp Ser Leu Val Lys Asn Gly Ile Pro Phe Thr Val Tyr Asp  
95 100 105  
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Asn Val Arg Val Glu Pro Thr Asp Ser Ser Phe Met Glu Ala Ile Glu  
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Phe Ala Gln Lys Gly Ala Phe Asp Ala Tyr Val Ala Val Gly Gly Gly  
125 130 135 140

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Ser Thr Met Asp Thr Cys Lys Ala Ala Asn Leu Tyr Ala Ser Ser Pro	
145 150 155	
cat tct gat ttc cta gat tat gtc agt gcc ccc att ggc aag gga aag	530
His Ser Asp Phe Leu Asp Tyr Val Ser Ala Pro Ile Gly Lys Gly Lys	
160 165 170	
cct gtg tct gtg cct ctt aag cct ctg att gca gtg cca act acc tca	578
Pro Val Ser Val Pro Leu Lys Pro Leu Ile Ala Val Pro Thr Thr Ser	
175 180 185	
gga acc ggg agt gaa act act ggg gtt gcc att ttt gac tat gaa cac	626
Gly Thr Gly Ser Glu Thr Thr Gly Val Ala Ile Phe Asp Tyr Glu His	
190 195 200	
ttg aaa gta aaa att ggc atc act tcg aga gcc atc aaa ccc aca ctg	674
Leu Lys Val Lys Ile Gly Ile Thr Ser Arg Ala Ile Lys Pro Thr Leu	
205 210 215 220	
gga ctg att gat cct ctg cac acc ctc cac atg cct gcc cga gtg gtc	722
Gly Leu Ile Asp Pro Leu His Thr Leu His Met Pro Ala Arg Val Val	
225 230 235	
gcc aac agt ggc ttt gat gtg ctt tgc cat gcc ctg gag tca tac acc	770
Ala Asn Ser Gly Phe Asp Val Leu Cys His Ala Leu Glu Ser Tyr Thr	
240 245 250	
acc ctg ccc tac cac ctg cgg agc ccc tgc cct tca aat ccc atc aca	818
Thr Leu Pro Tyr His Leu Arg Ser Pro Cys Pro Ser Asn Pro Ile Thr	
255 260 265	
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Arg Pro Ala Tyr Gln Gly Ser Asn Pro Ile Ser Asp Ile Trp Ala Ile	
270 275 280	
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His Ala Leu Arg Ile Val Ala Lys Tyr Leu Lys Arg Ala Val Arg Asn	
285 290 295 300	
ccc gat gat ctt gaa gca agg tct cat atg cac ttg gca agt gct ttt	962
Pro Asp Asp Leu Glu Ala Arg Ser His Met His Leu Ala Ser Ala Phe	
305 310 315	
gct ggc atc ggc ttt gga aat gct ggt gtt cat ctg tgc cat gga atg	1010
Ala Gly Ile Gly Phe Gly Asn Ala Gly Val His Leu Cys His Gly Met	
320 325 330	
tct tac cca att tca ggt tta gtg aag atg tat aaa gca aag gat tac	1058
Ser Tyr Pro Ile Ser Gly Leu Val Lys Met Tyr Lys Ala Lys Asp Tyr	
335 340 345	
aat gtg gat cac cca ctg gtg ccc cat ggc ctt tct gtg gtg ctc acg	1106
Asn Val Asp His Pro Leu Val Pro His Gly Leu Ser Val Val Leu Thr	
350 355 360	
tcc cca gcg gtg ttc act ttc acg gcc cag atg ttt cca gag cga cac	1154
Ser Pro Ala Val Phe Thr Phe Thr Ala Gln Met Phe Pro Glu Arg His	
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Leu Glu Met Ala Glu Ile Leu Gly Ala Asp Thr Arg Thr Ala Arg Ile	

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Gln Asp Ala Gly Leu Val Leu Ala Asp Thr Leu Arg Lys Phe Leu Phe			
400	405	410	
gat ctg gat gtt gat gat ggc cta gca gct gtt ggt tac tcc aaa gct			1298
Asp Leu Asp Val Asp Asp Gly Leu Ala Ala Val Gly Tyr Ser Lys Ala			
415	420	425	
gat atc ccc gca cta gtg aaa gga acg ctg ccc cag gaa agg gtc acc			1346
Asp Ile Pro Ala Leu Val Lys Gly Thr Leu Pro Gln Glu Arg Val Thr			
430	435	440	
aag ctt gca ccc tgt ccc cag tca gaa gag gat ctg gct gct ctg ttt			1394
Lys Leu Ala Pro Cys Pro Gln Ser Glu Glu Asp Leu Ala Ala Leu Phe			
445	450	455	460
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Glu Ala Ser Met Lys Leu Tyr *			
465			

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gcataactta cctgttacca gtataggtgg gatatacatt tatcttgcag gaaattcccc	1568
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gtacatacag aagcatggca aggatgtttc tggcagcact tttctaataa taaaagattt	1868
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35 40 45	
Met Ala Val Ser Asn Ile Arg Tyr Gly Ala Ala Val Thr Lys Glu Val	
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Gly Met Asp Leu Lys Asn Met Gly Ala Lys Asn Val Cys Leu Met Thr	
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85 90 95	
Leu Val Lys Asn Gly Ile Pro Phe Thr Val Tyr Asp Asn Val Arg Val	
100 105 110	
Glu Pro Thr Asp Ser Ser Phe Met Glu Ala Ile Glu Phe Ala Gln Lys	
115 120 125	
Gly Ala Phe Asp Ala Tyr Val Ala Val Gly Gly Gly Ser Thr Met Asp	
130 135 140	
Thr Cys Lys Ala Ala Asn Leu Tyr Ala Ser Ser Pro His Ser Asp Phe	
145 150 155 160	
Leu Asp Tyr Val Ser Ala Pro Ile Gly Lys Gly Lys Pro Val Ser Val	
165 170 175	
Pro Leu Lys Pro Leu Ile Ala Val Pro Thr Thr Ser Gly Thr Gly Ser	
180 185 190	



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Ser Pro Phe Phe Phe Leu Cys Thr His His Gly Glu Leu Glu Gly Asp	
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Gly Glu Gln Gly Glu Val Leu Ile Ser Leu His Ile Ala Gly Asn Pro	
50 55 60 65	
acc tac tac gtt ccg gga caa gaa tac cat gtg aca att tca aca agc	418
Thr Tyr Tyr Val Pro Gly Gln Glu Tyr His Val Thr Ile Ser Thr Ser	
70 75 80	
acc ttt ttt gac ggc ttg ctg gtg aca gga cta tac aca tct aca agt	466
Thr Phe Phe Asp Gly Leu Leu Val Thr Gly Leu Tyr Thr Ser Thr Ser	
85 90 95	
gtt cag gca tca cag agc att gga ggt tcc agt gct ttc gga ttt ggg	514
Val Gln Ala Ser Gln Ser Ile Gly Gly Ser Ser Ala Phe Gly Phe Gly	
100 105 110	
atc atg tct gac cac cag ttt ggt aac cag ttt atg tgc agt gtg gta	562
Ile Met Ser Asp His Gln Phe Gly Asn Gln Phe Met Cys Ser Val Val	
115 120 125	
gcc tct cac gtg agt cac ctg ccc aca acc aac ctc agt ttc atc tgg	610
Ala Ser His Val Ser His Leu Pro Thr Thr Asn Leu Ser Phe Ile Trp	
130 135 140 145	
att gct cca cct gcg ggc aca ggc tgt gtg aat ttc atg gct aca gca	658
Ile Ala Pro Pro Ala Gly Thr Gly Cys Val Asn Phe Met Ala Thr Ala	
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Thr His Arg Gly Gln Val Ile Phe Lys Asp Ala Leu Ala Gln Gln Leu	
165 170 175	
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Cys Glu Gln Gly Ala Pro Thr Asp Val Thr Val His Pro His Leu Ala	
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Glu Ile His Ser Asp Ser Ile Ile Leu Arg Asp Asp Phe Asp Ser Tyr	
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His Gln Leu Gln Leu Asn Pro Asn Ile Trp Val Glu Cys Asn Asn Cys	
210 215 220 225	
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Glu Thr Gly Glu Gln Cys Gly Ala Ile Met His Gly Asn Ala Val Thr	
230 235 240	
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Phe Cys Glu Pro Tyr Gly Pro Arg Glu Leu Ile Thr Thr Gly Leu Asn	
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Thr Thr Thr Ala Ser Val Leu Gln Phe Ser Ile Gly Ser Gly Ser Cys	
260 265 270	
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Arg Phe Ser Tyr Ser Asp Pro Ser Ile Ile Val Leu Tyr Ala Lys Asn	



275	280	285	
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gga att tgt gac cct gga aat tct cat gaa aat gac ata atc ctg tat Gly Ile Cys Asp Pro Gly Asn Ser His Glu Asn Asp Ile Ile Leu Tyr 485 490 495			1666
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Gln Gly His Asn Arg Asn Val Trp Ala Val Asp Phe Phe His Val Leu	
550 555 560	
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Leu Gly Cys Gly Thr His Gln Pro Gly Asn Ser Val Ser Leu Glu Phe	
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Ala Ala Leu Thr Arg Asn Thr Arg Ile Arg Trp Arg Gln Thr Gly Pro	
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Ile Leu Gly Asn Met Trp Ala Ile Asp Asn Val Tyr Ile Gly Pro Ser	
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Cys Leu Lys Phe Cys Ser Gly Arg Gly Gln Cys Thr Arg His Gly Cys	
675 680 685	
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Lys Cys Asp Pro Gly Phe Ser Gly Pro Ala Cys Glu Met Ala Ser Gln	
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Thr Phe Pro Met Phe Ile Ser Glu Ser Phe Gly Ser Ser Arg Leu Ser	
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Ser Tyr His Asn Phe Tyr Ser Ile Arg Gly Ala Glu Val Ser Phe Gly	
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Cys Gly Val Leu Ala Ser Gly Lys Ala Leu Val Phe Asn Lys Glu Gly	
740 745 750	
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Arg Arg Gln Leu Ile Thr Ser Phe Leu Asp Ser Ser Gln Ser Arg Phe	
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aga gaa gat gta tgg gct att gat gag att atc atg aca tct gtg ctt	Arg Glu Asp Val Trp Ala Ile Asp Glu Ile Ile Met Thr Ser Val Leu	2770		
	850	855	860	865
ttc aac agc att agt ctt gac ttt acc aat ctt gtg gag gtc act cag	Phe Asn Ser Ile Ser Leu Asp Phe Thr Asn Leu Val Glu Val Thr Gln	2818		
	870	875	880	
tct ctg gga ttc tac ctt gga aat gtt cag cca tac tgt ggc cac gac	Ser Leu Gly Phe Tyr Leu Gly Asn Val Gln Pro Tyr Cys Gly His Asp	2866		
	885	890	895	
tgg acc ctt tgt ttt aca gga gat tct aaa ctt gcc tca agt atg cgc	Trp Thr Leu Cys Phe Thr Gly Asp Ser Lys Leu Ala Ser Ser Met Arg	2914		
	900	905	910	
tat gtg gaa aca caa tca atg cag ata gga gca tcc tat atg att cag	Tyr Val Glu Thr Gln Ser Met Gln Ile Gly Ala Ser Tyr Met Ile Gln	2962		
	915	920	925	
ttc agt ttg gtg atg gga tgt ggc cag aaa tac acc cca cac atg gac	Phe Ser Leu Val Met Gly Cys Gly Gln Lys Tyr Thr Pro His Met Asp	3010		
	930	935	940	945
aac cag gtg aag ctg gag tac tca acc aac cac ggc ctt acc tgg cac	Asn Gln Val Lys Leu Glu Tyr Ser Thr Asn His Gly Leu Thr Trp His	3058		
	950	955	960	
ctc gtc caa gaa gaa tgc ctt cca agt atg cca agt tgt cag gaa ttt	Leu Val Gln Glu Glu Cys Leu Pro Ser Met Pro Ser Cys Gln Glu Phe	3106		
	965	970	975	
aca tca gca agt att tac cat gcc agt gag ttt aca cag tgg agg aga	Thr Ser Ala Ser Ile Tyr His Ala Ser Glu Phe Thr Gln Trp Arg Arg	3154		
	980	985	990	
gtc ata gtg ctt ctt ccc cag aaa act tgg tcc agt gct acc cgt ttc	Val Ile Val Leu Leu Pro Gln Lys Thr Trp Ser Ser Ala Thr Arg Phe	3202		
	995	1000	1005	
cgc tgg agc cag agc tat tac aca gct caa gac gag tgg gct ttg gac	Arg Trp Ser Gln Ser Tyr Tyr Thr Ala Gln Asp Glu Trp Ala Leu Asp	3250		
	1010	1015	1020	1025

agc att tac att ggg cag cag tgc ccc aac atg tgc agt ggg cat ggc	3298
Ser Ile Tyr Ile Gly Gln Gln Cys Pro Asn Met Cys Ser Gly His Gly	
1030 1035 1040	
tca tgc gat cat ggc ata tgc agg tgt gac cag ggg tac caa ggc act	3346
Ser Cys Asp His Gly Ile Cys Arg Cys Asp Gln Gly Tyr Gln Gly Thr	
1045 1050 1055	
gaa tgc cac cca gaa gct gcc ctt ccg tcc aca att atg tca gat ttt	3394
Glu Cys His Pro Glu Ala Ala Leu Pro Ser Thr Ile Met Ser Asp Phe	
1060 1065 1070	
gag aac cag aat ggc tgg gag tct gac tgg caa gaa gtt att ggg gga	3442
Glu Asn Gln Asn Gly Trp Glu Ser Asp Trp Gln Glu Val Ile Gly Gly	
1075 1080 1085	
gaa att gta aaa cca gaa caa ggg tgt ggt gtc atc tct tct gga tca	3490
Glu Ile Val Lys Pro Glu Gln Gly Cys Gly Val Ile Ser Ser Gly Ser	
1090 1095 1100 1105	
tct ctg tac ttc agc aag gct ggg aaa aga cag ctg gtg agt tgg gac	3538
Ser Leu Tyr Phe Ser Lys Ala Gly Lys Arg Gln Leu Val Ser Trp Asp	
1110 1115 1120	
ctg gat act tct tgg gtg gac ttt gtc cag ttc tac atc cag ata ggc	3586
Leu Asp Thr Ser Trp Val Asp Phe Val Gln Phe Tyr Ile Gln Ile Gly	
1125 1130 1135	
gga gag agt gct tca tgc aac aag cct gac agc aga gag gag ggc gtc	3634
Gly Glu Ser Ala Ser Cys Asn Lys Pro Asp Ser Arg Glu Glu Gly Val	
1140 1145 1150	
ctc ctt cag tac agc aac aat ggg ggc atc cag tgg cac ctg cta gca	3682
Leu Leu Gln Tyr Ser Asn Asn Gly Gly Ile Gln Trp His Leu Leu Ala	
1155 1160 1165	
gag atg tac ttt tca gac ttc agc aaa ccc aga ttt gtc tat ctg gag	3730
Glu Met Tyr Phe Ser Asp Phe Ser Lys Pro Arg Phe Val Tyr Leu Glu	
1170 1175 1180 1185	
ctt cca gct gct gcc aag acc cct tgc acc agg ttc cgc tgg tgg cag	3778
Leu Pro Ala Ala Ala Lys Thr Pro Cys Thr Arg Phe Arg Trp Trp Gln	
1190 1195 1200	
ccc gtg ttc tca ggg gag gac tat gac cag tgg gca gtc gat gac atc	3826
Pro Val Phe Ser Gly Glu Asp Tyr Asp Gln Trp Ala Val Asp Asp Ile	
1205 1210 1215	
atc att ctg tcc gag aag cag aag cag atc atc cca gtt atc aat cca	3874
Ile Ile Leu Ser Glu Lys Gln Lys Gln Ile Ile Pro Val Ile Asn Pro	
1220 1225 1230	
act tta cct cag aac ttt tat gag aag cca gct ttt gat tac cct atg	3922
Thr Leu Pro Gln Asn Phe Tyr Glu Lys Pro Ala Phe Asp Tyr Pro Met	
1235 1240 1245	
aat cag atg agt gtg tgg ttg atg ttg gct aat gaa gga atg gtt aaa	3970
Asn Gln Met Ser Val Trp Leu Met Leu Ala Asn Glu Gly Met Val Lys	
1250 1255 1260 1265	
aat gaa acc ttc tgt gct gcc aca cca tca gca atg ata ttt gga aaa	4018
Asn Glu Thr Phe Cys Ala Ala Thr Pro Ser Ala Met Ile Phe Gly Lys	

1270										1275					1280					
tca	gat	gga	gat	cga	ttt	gca	gta	act	cga	gat	ttg	acc	ctg	aaa	cct	4066				
Ser	Asp	Gly	Asp	Arg	Phe	Ala	Val	Thr	Arg	Asp	Leu	Thr	Leu	Lys	Pro					
1285					1290					1295										
gga	tat	gtg	cta	cag	ttc	aag	cta	aac	ata	ggg	tgt	gcc	aat	caa	ttc	4114				
Gly	Tyr	Val	Leu	Gln	Phe	Lys	Leu	Asn	Ile	Gly	Cys	Ala	Asn	Gln	Phe					
1300					1305					1310										
agc	agt	act	gct	cca	gtt	ctt	ctt	cag	tac	tct	cat	gat	gct	ggg	atg	4162				
Ser	Ser	Thr	Ala	Pro	Val	Leu	Leu	Gln	Tyr	Ser	His	Asp	Ala	Gly	Met					
1315					1320					1325										
tcc	tgg	ttt	ctg	gtg	aaa	gaa	ggc	tgt	tac	ccg	gct	tct	gca	ggc	aaa	4210				
Ser	Trp	Phe	Leu	Val	Lys	Glu	Gly	Cys	Tyr	Pro	Ala	Ser	Ala	Gly	Lys					
1330					1335					1340					1345					
gga	tgc	gaa	gga	aac	tcc	aga	gaa	cta	agt	gag	ccc	acc	atg	tat	cac	4258				
Gly	Cys	Glu	Gly	Asn	Ser	Arg	Glu	Leu	Ser	Glu	Pro	Thr	Met	Tyr	His					
1350					1355					1360										
aca	ggg	gac	ttt	gaa	gaa	tgg	aca	aga	atc	acc	att	gtt	att	cca	agg	4306				
Thr	Gly	Asp	Phe	Glu	Glu	Trp	Thr	Arg	Ile	Thr	Ile	Val	Ile	Pro	Arg					
1365					1370					1375										
tct	ctt	gca	tcc	agc	aag	acc	aga	ttc	cga	tgg	atc	cag	gag	agc	agc	4354				
Ser	Leu	Ala	Ser	Ser	Lys	Thr	Arg	Phe	Arg	Trp	Ile	Gln	Glu	Ser	Ser					
1380					1385					1390										
tca	cag	aaa	aac	gtg	cct	cca	ttt	ggg	tta	gat	gga	gtg	tac	ata	tcc	4402				
Ser	Gln	Lys	Asn	Val	Pro	Pro	Phe	Gly	Leu	Asp	Gly	Val	Tyr	Ile	Ser					
1395					1400					1405										
gag	cct	tgt	ccc	agt	tac	tgc	agt	ggc	cat	ggg	gac	tgc	att	tca	gga	4450				
Glu	Pro	Cys	Pro	Ser	Tyr	Cys	Ser	Gly	His	Gly	Asp	Cys	Ile	Ser	Gly					
1410					1415					1420					1425					
gtg	tgt	ttc	tgt	gac	ctg	gga	tat	act	gct	gca	caa	gga	acc	tgt	gtg	4498				
Val	Cys	Phe	Cys	Asp	Leu	Gly	Tyr	Thr	Ala	Ala	Gln	Gly	Thr	Cys	Val					
1430					1435					1440										
tca	aat	gtc	ccc	aat	cac	aat	gag	atg	ttc	gat	agg	ttt	gag	ggg	aag	4546				
Ser	Asn	Val	Pro	Asn	His	Asn	Glu	Met	Phe	Asp	Arg	Phe	Glu	Gly	Lys					
1445					1450					1455										
ctc	agc	cct	ctg	tgg	tac	aag	ata	aca	ggg	gcc	cag	gtt	gga	act	ggc	4594				
Leu	Ser	Pro	Leu	Trp	Tyr	Lys	Ile	Thr	Gly	Ala	Gln	Val	Gly	Thr	Gly					
1460					1465					1470										
tgt	gga	aca	ctt	aac	gat	ggc	aaa	tct	ctc	tac	ttc	aat	ggc	cct	ggg	4642				
Cys	Gly	Thr	Leu	Asn	Asp	Gly	Lys	Ser	Leu	Tyr	Phe	Asn	Gly	Pro	Gly					
1475					1480					1485										
aaa	agg	gaa	gcc	cgg	acg	gtc	cct	ctg	gac	acc	agg	aat	atc	aga	ctt	4690				
Lys	Arg	Glu	Ala	Arg	Thr	Val	Pro	Leu	Asp	Thr	Arg	Asn	Ile	Arg	Leu					
1490					1495					1500					1505					
gtt	caa	ttt	tat	ata	caa	att	gga	agc	aaa	act	tca	ggc	att	acc	tgc	4738				
Val	Gln	Phe	Tyr	Ile	Gln	Ile	Gly	Ser	Lys	Thr	Ser	Gly	Ile	Thr	Cys					
1510					1515					1520										

atc aaa cca aga act aga aat gaa ggg ctt att gtt cag tat tca aat	4786
Ile Lys Pro Arg Thr Arg Asn Glu Gly Leu Ile Val Gln Tyr Ser Asn	
1525 1530 1535	
gac aat ggg ata ctc tgg cat ttg ctt cga gag ttg gac ttc atg tcc	4834
Asp Asn Gly Ile Leu Trp His Leu Leu Arg Glu Leu Asp Phe Met Ser	
1540 1545 1550	
ttc ctg gaa cca cag atc att tcc att gac ctg cca cag gac gcg aag	4882
Phe Leu Glu Pro Gln Ile Ile Ser Ile Asp Leu Pro Gln Asp Ala Lys	
1555 1560 1565	
aca cct gca acg gca ttt cga tgg tgg caa ccg caa cat ggg aag cat	4930
Thr Pro Ala Thr Ala Phe Arg Trp Trp Gln Pro Gln His Gly Lys His	
1570 1575 1580 1585	
tca gcc cag tgg gct ttg gat gat gtt ctt ata gga atg aat gac agc	4978
Ser Ala Gln Trp Ala Leu Asp Asp Val Leu Ile Gly Met Asn Asp Ser	
1590 1595 1600	
tct caa act gga ttt caa gac aaa ttt gat ggc tct ata gat ttg caa	5026
Ser Gln Thr Gly Phe Gln Asp Lys Phe Asp Gly Ser Ile Asp Leu Gln	
1605 1610 1615	
gcc aac tgg tat cga atc caa gga ggt caa gtt gat att gac tgt ctc	5074
Ala Asn Trp Tyr Arg Ile Gln Gly Gly Gln Val Asp Ile Asp Cys Leu	
1620 1625 1630	
tct atg gat act gct ctg ata ttc act gaa aac ata gga aaa cct cgt	5122
Ser Met Asp Thr Ala Leu Ile Phe Thr Glu Asn Ile Gly Lys Pro Arg	
1635 1640 1645	
tat gct gag acc tgg gat ttt cat gtg tca gca tct acc ttt ttg cag	5170
Tyr Ala Glu Thr Trp Asp Phe His Val Ser Ala Ser Thr Phe Leu Gln	
1650 1655 1660 1665	
ttt gaa atg agc atg ggc tgt agc aag ccc ttc agc aac tcc cac agt	5218
Phe Glu Met Ser Met Gly Cys Ser Lys Pro Phe Ser Asn Ser His Ser	
1670 1675 1680	
gta cag ctc cag tat tct ctg aac aat ggc aag gac tgg cat ctt gtc	5266
Val Gln Leu Gln Tyr Ser Leu Asn Asn Gly Lys Asp Trp His Leu Val	
1685 1690 1695	
acc gaa gag tgt gtt cct cca acc att ggc tgt ctg cat tac acg gaa	5314
Thr Glu Glu Cys Val Pro Pro Thr Ile Gly Cys Leu His Tyr Thr Glu	
1700 1705 1710	
agt tca att tac acc tcg gaa aga ttc cag aat tgg aag cgg atc act	5362
Ser Ser Ile Tyr Thr Ser Glu Arg Phe Gln Asn Trp Lys Arg Ile Thr	
1715 1720 1725	
gtc tac ctt cca ctc tcc acc att tct ccc agg acc cgg ttc aga tgg	5410
Val Tyr Leu Pro Leu Ser Thr Ile Ser Pro Arg Thr Arg Phe Arg Trp	
1730 1735 1740 1745	
att cag gcc aac tac act gtg ggg gct gat tcc tgg gcg att gat aat	5458
Ile Gln Ala Asn Tyr Thr Val Gly Ala Asp Ser Trp Ala Ile Asp Asn	
1750 1755 1760	
gtt gta ctg gcc tca ggg tgc cct tgg atg tgc tca gga cga ggg att	5506
Val Val Leu Ala Ser Gly Cys Pro Trp Met Cys Ser Gly Arg Gly Ile	

1765					1770					1775						
tgt	gat	gct	gga	cgc	tgt	gtg	tgt	gac	cgg	ggc	ttt	ggg	gga	ccc	tat	5554
Cys	Asp	Ala	Gly	Arg	Cys	Val	Cys	Asp	Arg	Gly	Phe	Gly	Gly	Pro	Tyr	
1780					1785					1790						
tgt	gtt	cct	gtt	gtt	cct	ctg	ccc	tcg	att	ctt	aaa	gac	gat	ttc	aat	5602
Cys	Val	Pro	Val	Val	Pro	Leu	Pro	Ser	Ile	Leu	Lys	Asp	Asp	Phe	Asn	
1795					1800					1805						
ggg	aat	tta	cat	cct	gac	ctt	tgg	cct	gaa	gtg	tat	ggg	gca	gag	agg	5650
Gly	Asn	Leu	His	Pro	Asp	Leu	Trp	Pro	Glu	Val	Tyr	Gly	Ala	Glu	Arg	
1810					1815					1820					1825	
ggg	aat	ctg	aat	ggg	gaa	acc	atc	aaa	tct	gga	aca	tct	cta	att	ttt	5698
Gly	Asn	Leu	Asn	Gly	Glu	Thr	Ile	Lys	Ser	Gly	Thr	Ser	Leu	Ile	Phe	
1830					1835					1840						
aaa	ggg	gaa	gga	cta	agg	atg	ctt	att	tca	aga	gat	cta	gat	tgt	aca	5746
Lys	Gly	Glu	Gly	Leu	Arg	Met	Leu	Ile	Ser	Arg	Asp	Leu	Asp	Cys	Thr	
1845					1850					1855						
aat	aca	atg	tat	gtc	cag	ttt	tca	ctt	aga	ttt	ata	gca	aaa	agt	acc	5794
Asn	Thr	Met	Tyr	Val	Gln	Phe	Ser	Leu	Arg	Phe	Ile	Ala	Lys	Ser	Thr	
1860					1865					1870						
cca	gag	aga	tct	cac	tct	att	ctg	tta	caa	ttc	tcc	atc	agt	gga	gga	5842
Pro	Glu	Arg	Ser	His	Ser	Ile	Leu	Leu	Gln	Phe	Ser	Ile	Ser	Gly	Gly	
1875					1880					1885						
atc	act	tgg	cac	ctg	atg	gat	gaa	ttt	tac	ttt	cct	caa	aca	acg	aat	5890
Ile	Thr	Trp	His	Leu	Met	Asp	Glu	Phe	Tyr	Phe	Pro	Gln	Thr	Thr	Asn	
1890					1895					1900					1905	
ata	ctt	ttc	atc	aat	gtt	ccc	ttg	cca	tac	act	gcc	caa	acc	aat	gct	5938
Ile	Leu	Phe	Ile	Asn	Val	Pro	Leu	Pro	Tyr	Thr	Ala	Gln	Thr	Asn	Ala	
1910					1915					1920						
aca	aga	ttc	aga	ctc	tgg	caa	cct	tat	aat	aac	ggg	aag	aaa	gaa	gaa	5986
Thr	Arg	Phe	Arg	Leu	Trp	Gln	Pro	Tyr	Asn	Asn	Gly	Lys	Lys	Glu	Glu	
1925					1930					1935						
atc	tgg	att	gtt	gat	gac	ttc	att	atc	gat	gga	aat	aat	gta	aac	aac	6034
Ile	Trp	Ile	Val	Asp	Asp	Phe	Ile	Ile	Asp	Gly	Asn	Asn	Val	Asn	Asn	
1940					1945					1950						
cct	gtg	atg	ctc	ttg	gat	aca	ttt	gat	ttt	ggg	ccc	aga	gaa	gac	aat	6082
Pro	Val	Met	Leu	Leu	Asp	Thr	Phe	Asp	Phe	Gly	Pro	Arg	Glu	Asp	Asn	
1955					1960					1965						
tgg	ttt	ttc	tat	cct	ggg	ggg	aac	atc	ggg	ctt	tat	tgt	cca	tat	tct	6130
Trp	Phe	Phe	Tyr	Pro	Gly	Gly	Asn	Ile	Gly	Leu	Tyr	Cys	Pro	Tyr	Ser	
1970					1975					1980					1985	
tca	aag	ggg	gca	cct	gaa	gaa	gat	tca	gct	atg	gtg	ttt	gtt	tca	aat	6178
Ser	Lys	Gly	Ala	Pro	Glu	Glu	Asp	Ser	Ala	Met	Val	Phe	Val	Ser	Asn	
1990					1995					2000						
gaa	gtt	ggg	gag	cat	tcc	att	acc	acc	cgt	gac	cta	aat	gtg	aat	gag	6226
Glu	Val	Gly	Glu	His	Ser	Ile	Thr	Thr	Arg	Asp	Leu	Asn	Val	Asn	Glu	
2005					2010					2015						

aac acc atc ata caa ttt gag atc aac gtt ggc tgt tcg act gat agc Asn Thr Ile Ile Gln Phe Glu Ile Asn Val Gly Cys Ser Thr Asp Ser 2020 2025 2030	6274
tca tcc gcg gat cca gtg aga ctg gaa ttt tca agg gac ttc ggg gcg Ser Ser Ala Asp Pro Val Arg Leu Glu Phe Ser Arg Asp Phe Gly Ala 2035 2040 2045	6322
acc tgg cac ctt ctg ctg ccc ctc tgc tac cac agc agc agc cac gtc Thr Trp His Leu Leu Leu Pro Leu Cys Tyr His Ser Ser Ser His Val 2050 2055 2060 2065	6370
agc tct tta tgc tcc acc gag cac cac ccc agc agc acc tac tac gca Ser Ser Leu Cys Ser Thr Glu His His Pro Ser Ser Thr Tyr Tyr Ala 2070 2075 2080	6418
gga acc atg cag ggc tgg agg agg gag gtc gtg cac ttt ggg aag ctg Gly Thr Met Gln Gly Trp Arg Arg Glu Val Val His Phe Gly Lys Leu 2085 2090 2095	6466
cac ctt tgt gga tct gtc cgt ttc aga tgg tac cag gga ttt tac cct His Leu Cys Gly Ser Val Arg Phe Arg Trp Tyr Gln Gly Phe Tyr Pro 2100 2105 2110	6514
gcc ggc tct cag cca gtg aca tgg gcc att gat aat gtc tac atc ggt Ala Gly Ser Gln Pro Val Thr Trp Ala Ile Asp Asn Val Tyr Ile Gly 2115 2120 2125	6562
ccc cag tgt gag gag atg tgt aat gga cag ggg agc tgt atc aat gga Pro Gln Cys Glu Glu Met Cys Asn Gly Gln Gly Ser Cys Ile Asn Gly 2130 2135 2140 2145	6610
acc aaa tgt ata tgt gac cct ggc tac tca ggt cca acc tgt aaa ata Thr Lys Cys Ile Cys Asp Pro Gly Tyr Ser Gly Pro Thr Cys Lys Ile 2150 2155 2160	6658
agc acc aaa aat cct gat ttt ctc aaa gat gat ttc gaa ggt cag cta Ser Thr Lys Asn Pro Asp Phe Leu Lys Asp Asp Phe Glu Gly Gln Leu 2165 2170 2175	6706
gaa tct gat aga ttc tta tta atg agt ggt ggg aaa cca tct cga aag Glu Ser Asp Arg Phe Leu Leu Met Ser Gly Gly Lys Pro Ser Arg Lys 2180 2185 2190	6754
tgt gga atc ctt tct agt gga aac aac ctc ttt ttc aat gaa gat ggc Cys Gly Ile Leu Ser Ser Gly Asn Asn Leu Phe Phe Asn Glu Asp Gly 2195 2200 2205	6802
ttg cgc atg ttg atg aca cga gac ctg gat tta tca cat gct aga ttt Leu Arg Met Leu Met Thr Arg Asp Leu Asp Leu Ser His Ala Arg Phe 2210 2215 2220 2225	6850
gtg cag ttc ttc atg aga ctg gga tgt ggt aaa ggc gtt cct gac ccc Val Gln Phe Phe Met Arg Leu Gly Cys Gly Lys Gly Val Pro Asp Pro 2230 2235 2240	6898
agg agt caa ccc gtg ctc cta cag tat tct ctc aac ggt ggc ctc tcg Arg Ser Gln Pro Val Leu Leu Gln Tyr Ser Leu Asn Gly Gly Leu Ser 2245 2250 2255	6946
tgg agt ctt ctt cag gag ttc ctt ttc agc aat tcc agc aat gtg ggc Trp Ser Leu Leu Gln Glu Phe Leu Phe Ser Asn Ser Ser Asn Val Gly 2260 2265 2270 2275	6994



2260	2265	2270	
agg tac att gcc ctg gag ata ccc ttg aaa gcc cgt tct ggt tct act			7042
Arg Tyr Ile Ala Leu Glu Ile Pro Leu Lys Ala Arg Ser Gly Ser Thr			
2275	2280	2285	
cgc ctt cgc tgg tgg caa ccg tct gag aat ggg cac ttc tac agc ccc			7090
Arg Leu Arg Trp Trp Gln Pro Ser Glu Asn Gly His Phe Tyr Ser Pro			
2290	2295	2300	2305
tgg gtt atc gat cag att ctt att gga gga aat att tct ggt aat acg			7138
Trp Val Ile Asp Gln Ile Leu Ile Gly Gly Asn Ile Ser Gly Asn Thr			
2310	2315	2320	
gtc ttg gaa gat gat ttc aca acc ctt gat agt agg aaa tgg ctg ctt			7186
Val Leu Glu Asp Asp Phe Thr Thr Leu Asp Ser Arg Lys Trp Leu Leu			
2325	2330	2335	
cac cca gga ggc acc aag atg ccc gtg tgt ggc tct act ggt gat gcc			7234
His Pro Gly Gly Thr Lys Met Pro Val Cys Gly Ser Thr Gly Asp Ala			
2340	2345	2350	
ctg gtc ttc att gaa aag gcc agc acc cgt tac gtg gtc agc aca gac			7282
Leu Val Phe Ile Glu Lys Ala Ser Thr Arg Tyr Val Val Ser Thr Asp			
2355	2360	2365	
gtt gcc gtg aat gag gat tcc ttc cta cag ata gac ttc gct gcc tcc			7330
Val Ala Val Asn Glu Asp Ser Phe Leu Gln Ile Asp Phe Ala Ala Ser			
2370	2375	2380	2385
tgc tca gtc aca gac tct tgt tat gcg att gaa ttg gaa tac tca gta			7378
Cys Ser Val Thr Asp Ser Cys Tyr Ala Ile Glu Leu Glu Tyr Ser Val			
2390	2395	2400	
gat ctt gga ttg tca tgg cac cca ttg gta agg gac tgt ctg cct acc			7426
Asp Leu Gly Leu Ser Trp His Pro Leu Val Arg Asp Cys Leu Pro Thr			
2405	2410	2415	
aat gtg gaa tgc agt cgc tat cat ctg caa cgg atc ctg gtg tca gac			7474
Asn Val Glu Cys Ser Arg Tyr His Leu Gln Arg Ile Leu Val Ser Asp			
2420	2425	2430	
act ttc aac aag tgg act aga atc act ctg cct ctc cct cct tat acc			7522
Thr Phe Asn Lys Trp Thr Arg Ile Thr Leu Pro Leu Pro Pro Tyr Thr			
2435	2440	2445	
agg tcc caa gcc act cgt ttc cgt tgg cat caa cca gct cct ttt gac			7570
Arg Ser Gln Ala Thr Arg Phe Arg Trp His Gln Pro Ala Pro Phe Asp			
2450	2455	2460	2465
aag cag cag aca tgg gca ata gat aat gtc tat atc ggg gat ggc tgc			7618
Lys Gln Gln Thr Trp Ala Ile Asp Asn Val Tyr Ile Gly Asp Gly Cys			
2470	2475	2480	
ata gac atg tgc agt ggc cat ggg aga tgc atc cag gga aac tgc gtc			7666
Ile Asp Met Cys Ser Gly His Gly Arg Cys Ile Gln Gly Asn Cys Val			
2485	2490	2495	
tgt gat gaa cag tgg ggt ggc ctg tac tgt gat gac ccc gag acc tct			7714
Cys Asp Glu Gln Trp Gly Gly Leu Tyr Cys Asp Asp Pro Glu Thr Ser			
2500	2505	2510	

ctt cca acc caa ctc aaa gac aac ttc aat cga gct cca tcc agt cag	7762
Leu Pro Thr Gln Leu Lys Asp Asn Phe Asn Arg Ala Pro Ser Ser Gln	
2515 2520 2525	
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Val Leu Leu Glu Tyr Ser Val Asn Gly Gly Ile Thr Trp Asn Leu Leu	
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Arg Tyr Pro *				
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<211> 3460

<212> PRT

<213> Homo Sapiens

<400> 46

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Phe Ser Pro Phe Phe Phe Leu Cys Thr His His Gly Glu Leu Glu Gly
 35          40          45
Asp Gly Glu Gln Gly Glu Val Leu Ile Ser Leu His Ile Ala Gly Asn
 50          55          60
Pro Thr Tyr Tyr Val Pro Gly Gln Glu Tyr His Val Thr Ile Ser Thr
 65          70          75          80
Ser Thr Phe Phe Asp Gly Leu Leu Val Thr Gly Leu Tyr Thr Ser Thr
 85          90          95
Ser Val Gln Ala Ser Gln Ser Ile Gly Gly Ser Ser Ala Phe Gly Phe
100          105          110
Gly Ile Met Ser Asp His Gln Phe Gly Asn Gln Phe Met Cys Ser Val
115          120          125
Val Ala Ser His Val Ser His Leu Pro Thr Thr Asn Leu Ser Phe Ile
130          135          140
Trp Ile Ala Pro Pro Ala Gly Thr Gly Cys Val Asn Phe Met Ala Thr
145          150          155          160
Ala Thr His Arg Gly Gln Val Ile Phe Lys Asp Ala Leu Ala Gln Gln
165          170          175
Leu Cys Glu Gln Gly Ala Pro Thr Asp Val Thr Val His Pro His Leu
180          185          190
Ala Glu Ile His Ser Asp Ser Ile Ile Leu Arg Asp Asp Phe Asp Ser
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Tyr His Gln Leu Gln Leu Asn Pro Asn Ile Trp Val Glu Cys Asn Asn
210          215          220
Cys Glu Thr Gly Glu Gln Cys Gly Ala Ile Met His Gly Asn Ala Val
225          230          235          240
Thr Phe Cys Glu Pro Tyr Gly Pro Arg Glu Leu Ile Thr Thr Gly Leu
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Cys Arg Phe Ser Tyr Ser Asp Pro Ser Ile Ile Val Leu Tyr Ala Lys
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305          310          315          320
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325          330          335
Glu Val Tyr Glu Ala Cys Trp Ala Leu Asp Asn Ile Leu Ile Ile Asn
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Ser Ala His Arg Gln Val Val Leu Glu Asp Ser Leu Asp Pro Val Asp
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Tyr	Ala	Lys	Ile	Glu	Gly	Arg	Lys	Glu	His	Ile	Thr	Leu	Asp	Thr	Leu
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Ser	Tyr	Ser	Ser	Tyr	Lys	Val	Pro	Ser	Leu	Val	Ser	Val	Val	Ile	Asn
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Pro	Glu	Leu	Gln	Thr	Pro	Ala	Thr	Lys	Phe	Cys	Leu	Arg	Gln	Lys	Asn
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His	Gln	Gly	His	Asn	Arg	Asn	Val	Trp	Ala	Val	Asp	Phe	Phe	His	Val
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Leu	Pro	Val	Leu	Pro	Ser	Thr	Met	Ser	His	Met	Ile	Gln	Phe	Ser	Ile
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Phe	Ser	Thr	Asn	His	Gly	Arg	Ser	Trp	Ser	Leu	Leu	His	Thr	Glu	Cys
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Leu	Pro	Glu	Ile	Cys	Ala	Gly	Pro	His	Leu	Pro	His	Ser	Thr	Val	Tyr
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Pro	Ile	Leu	Gly	Asn	Met	Trp	Ala	Ile	Asp	Asn	Val	Tyr	Ile	Gly	Pro
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Cys	Lys	Cys	Asp	Pro	Gly	Phe	Ser	Gly	Pro	Ala	Cys	Glu	Met	Ala	Ser
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Ile	Ile	Ile	Leu	Ser	Glu	Lys	Gln	Lys	Gln	Ile	Ile	Pro	Val	Ile	Asn	1220	1225	1230	
Pro	Thr	Leu	Pro	Gln	Asn	Phe	Tyr	Glu	Lys	Pro	Ala	Phe	Asp	Tyr	Pro	1235	1240	1245	
Met	Asn	Gln	Met	Ser	Val	Trp	Leu	Met	Leu	Ala	Asn	Glu	Gly	Met	Val	1250	1255	1260	
Lys	Asn	Glu	Thr	Phe	Cys	Ala	Ala	Thr	Pro	Ser	Ala	Met	Ile	Phe	Gly	1265	1270	1275	1280
Lys	Ser	Asp	Gly	Asp	Arg	Phe	Ala	Val	Thr	Arg	Asp	Leu	Thr	Leu	Lys	1285	1290	1295	
Pro	Gly	Tyr	Val	Leu	Gln	Phe	Lys	Leu	Asn	Ile	Gly	Cys	Ala	Asn	Gln	1300	1305	1310	
Phe	Ser	Ser	Thr	Ala	Pro	Val	Leu	Gln	Tyr	Ser	His	Asp	Ala	Gly		1315	1320	1325	
Met	Ser	Trp	Phe	Leu	Val	Lys	Glu	Gly	Cys	Tyr	Pro	Ala	Ser	Ala	Gly	1330	1335	1340	
Lys	Gly	Cys	Glu	Gly	Asn	Ser	Arg	Glu	Leu	Ser	Glu	Pro	Thr	Met	Tyr	1345	1350	1355	1360



His Thr Gly Asp Phe Glu Glu Trp Thr Arg Ile Thr Ile Val Ile Pro  
 1365 1370 1375  
 Arg Ser Leu Ala Ser Ser Lys Thr Arg Phe Arg Trp Ile Gln Glu Ser  
 1380 1385 1390  
 Ser Ser Gln Lys Asn Val Pro Pro Phe Gly Leu Asp Gly Val Tyr Ile  
 1395 1400 1405  
 Ser Glu Pro Cys Pro Ser Tyr Cys Ser Gly His Gly Asp Cys Ile Ser  
 1410 1415 1420  
 Gly Val Cys Phe Cys Asp Leu Gly Tyr Thr Ala Ala Gln Gly Thr Cys  
 1425 1430 1435 1440  
 Val Ser Asn Val Pro Asn His Asn Glu Met Phe Asp Arg Phe Glu Gly  
 1445 1450 1455  
 Lys Leu Ser Pro Leu Trp Tyr Lys Ile Thr Gly Ala Gln Val Gly Thr  
 1460 1465 1470  
 Gly Cys Gly Thr Leu Asn Asp Gly Lys Ser Leu Tyr Phe Asn Gly Pro  
 1475 1480 1485  
 Gly Lys Arg Glu Ala Arg Thr Val Pro Leu Asp Thr Arg Asn Ile Arg  
 1490 1495 1500  
 Leu Val Gln Phe Tyr Ile Gln Ile Gly Ser Lys Thr Ser Gly Ile Thr  
 1505 1510 1515 1520  
 Cys Ile Lys Pro Arg Thr Arg Asn Glu Gly Leu Ile Val Gln Tyr Ser  
 1525 1530 1535  
 Asn Asp Asn Gly Ile Leu Trp His Leu Leu Arg Glu Leu Asp Phe Met  
 1540 1545 1550  
 Ser Phe Leu Glu Pro Gln Ile Ile Ser Ile Asp Leu Pro Gln Asp Ala  
 1555 1560 1565  
 Lys Thr Pro Ala Thr Ala Phe Arg Trp Trp Gln Pro Gln His Gly Lys  
 1570 1575 1580  
 His Ser Ala Gln Trp Ala Leu Asp Asp Val Leu Ile Gly Met Asn Asp  
 1585 1590 1595 1600  
 Ser Ser Gln Thr Gly Phe Gln Asp Lys Phe Asp Gly Ser Ile Asp Leu  
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 Gln Ala Asn Trp Tyr Arg Ile Gln Gly Gly Gln Val Asp Ile Asp Cys  
 1620 1625 1630  
 Leu Ser Met Asp Thr Ala Leu Ile Phe Thr Glu Asn Ile Gly Lys Pro  
 1635 1640 1645  
 Arg Tyr Ala Glu Thr Trp Asp Phe His Val Ser Ala Ser Thr Phe Leu  
 1650 1655 1660  
 Gln Phe Glu Met Ser Met Gly Cys Ser Lys Pro Phe Ser Asn Ser His  
 1665 1670 1675 1680  
 Ser Val Gln Leu Gln Tyr Ser Leu Asn Asn Gly Lys Asp Trp His Leu  
 1685 1690 1695  
 Val Thr Glu Glu Cys Val Pro Pro Thr Ile Gly Cys Leu His Tyr Thr  
 1700 1705 1710  
 Glu Ser Ser Ile Tyr Thr Ser Glu Arg Phe Gln Asn Trp Lys Arg Ile  
 1715 1720 1725  
 Thr Val Tyr Leu Pro Leu Ser Thr Ile Ser Pro Arg Thr Arg Phe Arg  
 1730 1735 1740  
 Trp Ile Gln Ala Asn Tyr Thr Val Gly Ala Asp Ser Trp Ala Ile Asp  
 1745 1750 1755 1760  
 Asn Val Val Leu Ala Ser Gly Cys Pro Trp Met Cys Ser Gly Arg Gly  
 1765 1770 1775  
 Ile Cys Asp Ala Gly Arg Cys Val Cys Asp Arg Gly Phe Gly Gly Pro  
 1780 1785 1790  
 Tyr Cys Val Pro Val Val Pro Leu Pro Ser Ile Leu Lys Asp Asp Phe  
 1795 1800 1805  
 Asn Gly Asn Leu His Pro Asp Leu Trp Pro Glu Val Tyr Gly Ala Glu  
 1810 1815 1820  
 Arg Gly Asn Leu Asn Gly Glu Thr Ile Lys Ser Gly Thr Ser Leu Ile  
 1825 1830 1835 1840  
 Phe Lys Gly Glu Gly Leu Arg Met Leu Ile Ser Arg Asp Leu Asp Cys  
 1845 1850 1855

Thr	Asn	Thr	Met	Tyr	Val	Gln	Phe	Ser	Leu	Arg	Phe	Ile	Ala	Lys	Ser		
			1860					1865					1870				
Thr	Pro	Glu	Arg	Ser	His	Ser	Ile	Leu	Leu	Gln	Phe	Ser	Ile	Ser	Gly		
		1875					1880					1885					
Gly	Ile	Thr	Trp	His	Leu	Met	Asp	Glu	Phe	Tyr	Phe	Pro	Gln	Thr	Thr		
	1890					1895					1900						
Asn	Ile	Leu	Phe	Ile	Asn	Val	Pro	Leu	Pro	Tyr	Thr	Ala	Gln	Thr	Asn		
1905					1910					1915					1920		
Ala	Thr	Arg	Phe	Arg	Leu	Trp	Gln	Pro	Tyr	Asn	Asn	Gly	Lys	Lys	Glu		
			1925						1930						1935		
Glu	Ile	Trp	Ile	Val	Asp	Asp	Phe	Ile	Ile	Asp	Gly	Asn	Asn	Val	Asn		
		1940						1945						1950			
Asn	Pro	Val	Met	Leu	Leu	Asp	Thr	Phe	Asp	Phe	Gly	Pro	Arg	Glu	Asp		
	1955						1960						1965				
Asn	Trp	Phe	Phe	Tyr	Pro	Gly	Gly	Asn	Ile	Gly	Leu	Tyr	Cys	Pro	Tyr		
	1970					1975				1980							
Ser	Ser	Lys	Gly	Ala	Pro	Glu	Glu	Asp	Ser	Ala	Met	Val	Phe	Val	Ser		
1985					1990					1995					2000		
Asn	Glu	Val	Gly	Glu	His	Ser	Ile	Thr	Thr	Arg	Asp	Leu	Asn	Val	Asn		
			2005						2010						2015		
Glu	Asn	Thr	Ile	Ile	Gln	Phe	Glu	Ile	Asn	Val	Gly	Cys	Ser	Thr	Asp		
		2020						2025						2030			
Ser	Ser	Ser	Ala	Asp	Pro	Val	Arg	Leu	Glu	Phe	Ser	Arg	Asp	Phe	Gly		
		2035					2040					2045					
Ala	Thr	Trp	His	Leu	Leu	Leu	Pro	Leu	Cys	Tyr	His	Ser	Ser	Ser	His		
	2050					2055					2060						
Val	Ser	Ser	Leu	Cys	Ser	Thr	Glu	His	His	Pro	Ser	Ser	Thr	Tyr	Tyr		
2065					2070					2075					2080		
Ala	Gly	Thr	Met	Gln	Gly	Trp	Arg	Arg	Glu	Val	Val	His	Phe	Gly	Lys		
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Leu	His	Leu	Cys	Gly	Ser	Val	Arg	Phe	Arg	Trp	Tyr	Gln	Gly	Phe	Tyr		
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Pro	Ala	Gly	Ser	Gln	Pro	Val	Thr	Trp	Ala	Ile	Asp	Asn	Val	Tyr	Ile		
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Gly	Pro	Gln	Cys	Glu	Glu	Met	Cys	Asn	Gly	Gln	Gly	Ser	Cys	Ile	Asn		
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Gly	Thr	Lys	Cys	Ile	Cys	Asp	Pro	Gly	Tyr	Ser	Gly	Pro	Thr	Cys	Lys		
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Ile	Ser	Thr	Lys	Asn	Pro	Asp	Phe	Leu	Lys	Asp	Asp	Phe	Glu	Gly	Gln		
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Leu	Glu	Ser	Asp	Arg	Phe	Leu	Leu	Met	Ser	Gly	Gly	Lys	Pro	Ser	Arg		
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Lys	Cys	Gly	Ile	Leu	Ser	Ser	Gly	Asn	Asn	Leu	Phe	Phe	Asn	Glu	Asp		
	2195						2200					2205					
Gly	Leu	Arg	Met	Leu	Met	Thr	Arg	Asp	Leu	Asp	Leu	Ser	His	Ala	Arg		
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Phe	Val	Gln	Phe	Phe	Met	Arg	Leu	Gly	Cys	Gly	Lys	Gly	Val	Pro	Asp		
2225					2230					2235					2240		
Pro	Arg	Ser	Gln	Pro	Val	Leu	Leu	Gln	Tyr	Ser	Leu	Asn	Gly	Gly	Leu		
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Ser	Trp	Ser	Leu	Leu	Gln	Glu	Phe	Leu	Phe	Ser	Asn	Ser	Ser	Asn	Val		
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Gly	Arg	Tyr	Ile	Ala	Leu	Glu	Ile	Pro	Leu	Lys	Ala	Arg	Ser	Gly	Ser		
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Thr	Arg	Leu	Arg	Trp	Trp	Gln	Pro	Ser	Glu	Asn	Gly	His	Phe	Tyr	Ser		
	2290					2295					2300						
Pro	Trp	Val	Ile	Asp	Gln	Ile	Leu	Ile	Gly	Gly	Asn	Ile	Ser	Gly	Asn		
2305					2310					2315					2320		
Thr	Val	Leu	Glu	Asp	Asp	Phe	Thr	Thr	Leu	Asp	Ser	Arg	Lys	Trp	Leu		
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Leu	His	Pro	Gly	Gly	Thr	Lys	Met	Pro	Val	Cys	Gly	Ser	Thr	Gly	Asp		
		2340						2345						2350			

Ala	Leu	Val	Phe	Ile	Glu	Lys	Ala	Ser	Thr	Arg	Tyr	Val	Val	Ser	Thr	2355	2360	2365
Asp	Val	Ala	Val	Asn	Glu	Asp	Ser	Phe	Leu	Gln	Ile	Asp	Phe	Ala	Ala	2370	2375	2380
Ser	Cys	Ser	Val	Thr	Asp	Ser	Cys	Tyr	Ala	Ile	Glu	Leu	Glu	Tyr	Ser	2385	2390	2395
Val	Asp	Leu	Gly	Leu	Ser	Trp	His	Pro	Leu	Val	Arg	Asp	Cys	Leu	Pro	2405	2410	2415
Thr	Asn	Val	Glu	Cys	Ser	Arg	Tyr	His	Leu	Gln	Arg	Ile	Leu	Val	Ser	2420	2425	2430
Asp	Thr	Phe	Asn	Lys	Trp	Thr	Arg	Ile	Thr	Leu	Pro	Leu	Pro	Pro	Tyr	2435	2440	2445
Thr	Arg	Ser	Gln	Ala	Thr	Arg	Phe	Arg	Trp	His	Gln	Pro	Ala	Pro	Phe	2450	2455	2460
Asp	Lys	Gln	Gln	Thr	Trp	Ala	Ile	Asp	Asn	Val	Tyr	Ile	Gly	Asp	Gly	2465	2470	2475
Cys	Ile	Asp	Met	Cys	Ser	Gly	His	Gly	Arg	Cys	Ile	Gln	Gly	Asn	Cys	2485	2490	2495
Val	Cys	Asp	Glu	Gln	Trp	Gly	Gly	Leu	Tyr	Cys	Asp	Asp	Pro	Glu	Thr	2500	2505	2510
Ser	Leu	Pro	Thr	Gln	Leu	Lys	Asp	Asn	Phe	Asn	Arg	Ala	Pro	Ser	Ser	2515	2520	2525
Gln	Asn	Trp	Leu	Thr	Val	Asn	Gly	Gly	Lys	Leu	Ser	Thr	Val	Cys	Gly	2530	2535	2540
Ala	Val	Ala	Ser	Gly	Met	Ala	Leu	His	Phe	Ser	Gly	Gly	Cys	Ser	Arg	2545	2550	2555
Leu	Leu	Val	Thr	Val	Asp	Leu	Asn	Leu	Thr	Asn	Ala	Glu	Phe	Ile	Gln	2565	2570	2575
Phe	Tyr	Phe	Met	Tyr	Gly	Cys	Leu	Ile	Thr	Pro	Asn	Asn	Arg	Asn	Gln	2580	2585	2590
Gly	Val	Leu	Leu	Glu	Tyr	Ser	Val	Asn	Gly	Gly	Ile	Thr	Trp	Asn	Leu	2595	2600	2605
Leu	Met	Glu	Ile	Phe	Tyr	Asp	Gln	Tyr	Ser	Lys	Pro	Gly	Phe	Val	Asn	2610	2615	2620
Ile	Leu	Leu	Pro	Pro	Asp	Ala	Lys	Glu	Ile	Ala	Thr	Arg	Phe	Arg	Trp	2625	2630	2635
Trp	Gln	Pro	Arg	His	Asp	Gly	Leu	Asp	Gln	Asn	Asp	Trp	Ala	Ile	Asp	2645	2650	2655
Asn	Val	Leu	Ile	Ser	Gly	Ser	Ala	Asp	Gln	Arg	Thr	Val	Met	Leu	Asp	2660	2665	2670
Thr	Phe	Ser	Ser	Ala	Pro	Val	Pro	Gln	His	Glu	Arg	Ser	Pro	Ala	Asp	2675	2680	2685
Ala	Gly	Pro	Val	Gly	Arg	Ile	Ala	Phe	Asp	Met	Phe	Met	Glu	Asp	Lys	2690	2695	2700
Thr	Ser	Val	Asn	Glu	His	Trp	Leu	Phe	His	Asp	Asp	Cys	Thr	Val	Glu	2705	2710	2715
Arg	Phe	Cys	Asp	Ser	Pro	Asp	Gly	Val	Met	Leu	Cys	Gly	Ser	His	Asp	2725	2730	2735
Gly	Arg	Glu	Val	Tyr	Ala	Val	Thr	His	Asp	Leu	Thr	Pro	Thr	Glu	Gly	2740	2745	2750
Trp	Ile	Met	Gln	Phe	Lys	Ile	Ser	Val	Gly	Cys	Lys	Val	Ser	Glu	Lys	2755	2760	2765
Ile	Ala	Gln	Asn	Gln	Ile	His	Val	Gln	Tyr	Ser	Thr	Asp	Phe	Gly	Val	2770	2775	2780
Ser	Trp	Asn	Tyr	Leu	Val	Pro	Gln	Cys	Leu	Pro	Ala	Asp	Pro	Lys	Cys	2785	2790	2795
Ser	Gly	Ser	Val	Ser	Gln	Pro	Ser	Val	Phe	Phe	Pro	Thr	Lys	Gly	Trp	2805	2810	2815
Lys	Arg	Ile	Thr	Tyr	Pro	Leu	Pro	Glu	Ser	Leu	Val	Gly	Asn	Pro	Val	2820	2825	2830
Arg	Phe	Arg	Phe	Tyr	Gln	Lys	Tyr	Ser	Asp	Met	Gln	Trp	Ala	Ile	Asp	2835	2840	2845

Asn Phe Tyr Leu Gly Pro Gly Cys Leu Asp Asn Cys Arg Gly His Gly	2850	2855	2860
Asp Cys Leu Arg Glu Gln Cys Ile Cys Asp Pro Gly Tyr Ser Gly Pro	2865	2870	2875
Asn Cys Tyr Leu Thr His Thr Leu Lys Thr Phe Leu Lys Glu Arg Phe	2885	2890	2895
Asp Ser Glu Glu Ile Lys Pro Asp Leu Trp Met Ser Leu Glu Gly Gly	2900	2905	2910
Ser Thr Cys Thr Glu Cys Gly Ile Leu Ala Glu Asp Thr Ala Leu Tyr	2915	2920	2925
Phe Gly Gly Ser Thr Val Arg Gln Ala Val Thr Gln Asp Leu Asp Leu	2930	2935	2940
Arg Gly Ala Lys Phe Leu Gln Tyr Trp Gly Arg Ile Gly Ser Glu Asn	2945	2950	2955
Asn Met Thr Ser Cys His Arg Pro Ile Cys Arg Lys Glu Gly Val Leu	2965	2970	2975
Leu Asp Tyr Ser Thr Asp Gly Gly Ile Thr Trp Thr Leu Leu His Glu	2980	2985	2990
Met Asp Tyr Gln Lys Tyr Ile Ser Val Arg His Asp Tyr Ile Leu Leu	2995	3000	3005
Pro Glu Asp Ala Leu Thr Asn Thr Thr Arg Leu Arg Trp Trp Gln Pro	3010	3015	3020
Phe Val Ile Ser Asn Gly Ile Val Val Ser Gly Val Glu Arg Ala Gln	3025	3030	3035
Trp Ala Leu Asp Asn Ile Leu Ile Gly Gly Ala Glu Ile Asn Pro Ser	3045	3050	3055
Gln Leu Val Asp Thr Phe Asp Asp Glu Gly Thr Ser His Glu Glu Asn	3060	3065	3070
Trp Ser Phe Tyr Pro Asn Ala Val Arg Thr Ala Gly Phe Cys Gly Asn	3075	3080	3085
Pro Ser Phe His Leu Tyr Trp Pro Asn Lys Lys Lys Asp Lys Thr His	3090	3095	3100
Asn Ala Leu Ser Ser Arg Glu Leu Ile Ile Gln Pro Gly Tyr Met Met	3105	3110	3115
Gln Phe Lys Ile Val Val Gly Cys Glu Ala Thr Ser Cys Gly Asp Leu	3125	3130	3135
His Ser Val Met Leu Glu Tyr Thr Lys Asp Ala Arg Ser Asp Ser Trp	3140	3145	3150
Gln Leu Val Gln Thr Gln Cys Leu Pro Ser Ser Ser Asn Ser Ile Gly	3155	3160	3165
Cys Ser Pro Phe Gln Phe His Glu Ala Thr Ile Tyr Asn Ser Val Asn	3170	3175	3180
Ser Ser Ser Trp Lys Arg Ile Thr Ile Gln Leu Pro Asp His Val Ser	3185	3190	3195
Ser Ser Ala Thr Gln Phe Arg Trp Ile Gln Lys Gly Glu Glu Thr Glu	3205	3210	3215
Lys Gln Ser Trp Ala Ile Asp His Val Tyr Ile Gly Glu Ala Cys Pro	3220	3225	3230
Lys Leu Cys Ser Gly His Gly Tyr Cys Thr Thr Gly Ala Ile Cys Ile	3235	3240	3245
Cys Asp Glu Ser Phe Gln Gly Asp Asp Cys Ser Val Phe Ser His Asp	3250	3255	3260
Leu Pro Ser Tyr Ile Lys Asp Asn Phe Glu Ser Ala Arg Val Thr Glu	3265	3270	3275
Ala Asn Trp Glu Thr Ile Gln Gly Gly Val Ile Gly Ser Gly Cys Gly	3285	3290	3295
Gln Leu Ala Pro Tyr Ala His Gly Asp Ser Leu Tyr Phe Asn Gly Cys	3300	3305	3310
Gln Ile Arg Gln Ala Ala Thr Lys Pro Leu Asp Leu Thr Arg Ala Ser	3315	3320	3325
Lys Ile Met Phe Val Leu Gln Ile Gly Ser Met Ser Gln Thr Asp Ser	3330	3335	3340

Cys Asn Ser Asp Leu Ser Gly Pro His Ala Val Asp Lys Ala Val Leu  
 3345 3350 3355 3360  
 Leu Gln Tyr Ser Val Asn Asn Gly Ile Thr Trp His Val Ile Ala Gln  
 3365 3370 3375  
 His Gln Pro Lys Asp Phe Thr Gln Ala Gln Arg Val Ser Tyr Asn Val  
 3380 3385 3390  
 Pro Leu Glu Ala Arg Met Lys Gly Val Leu Leu Arg Trp Trp Gln Pro  
 3395 3400 3405  
 Arg His Asn Gly Thr Gly His Asp Gln Trp Ala Leu Asp His Val Glu  
 3410 3415 3420  
 Val Val Leu Val Ser Thr Arg Lys Gln Asn Tyr Met Met Asn Phe Ser  
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 Met Trp Leu Glu  
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atc ctc ctc act tca gtg ctg ggc ttt gcc atc tac tgg ttc atc tcc 222  
 Ile Leu Leu Thr Ser Val Leu Gly Phe Ala Ile Tyr Trp Phe Ile Ser  
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 Arg Asp Lys Glu Glu Thr Leu Pro Leu Glu Asp Gly Trp Trp Gly Pro  
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ggc acg agg tcc gca gcc agg gag gac gac agc atc cgc cct ttc aag 318  
 Gly Thr Arg Ser Ala Ala Arg Glu Asp Asp Ser Ile Arg Pro Phe Lys  
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gtg gaa acg tca gat gag gag atc cac gac tta cac cag agg atc gat 366  
 Val Glu Thr Ser Asp Glu Glu Ile His Asp Leu His Gln Arg Ile Asp  
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aag ttc cgt ttc acc cca cct ttg gag gac agc tgc ttc cac tat ggc 414  
 Lys Phe Arg Phe Thr Pro Pro Leu Glu Asp Ser Cys Phe His Tyr Gly  
 70 75 80

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 Phe Asn Ser Asn Tyr Leu Lys Lys Val Ile Ser Tyr Trp Arg Asn Glu  
 85 90 95 100

ttt gac tgg aag aag cag gtg gag att ctc aac aga tac cct cac ttc 510  
 Phe Asp Trp Lys Lys Gln Val Glu Ile Leu Asn Arg Tyr Pro His Phe  
 105 110 115

aag act aag att gaa ggg ctg gac atc cac ttc atc cac gtg aag ccc	558
Lys Thr Lys Ile Glu Gly Leu Asp Ile His Phe Ile His Val Lys Pro	
120 125 130	
ccc cag ctg ccc gca ggc cat acc ccg aag ccc ttg ctg atg gtg cac	606
Pro Gln Leu Pro Ala Gly His Thr Pro Lys Pro Leu Leu Met Val His	
135 140 145	
ggc tgg ccc ggc tct ttc tac gag ttt tat aag atc atc cca ctc ctg	654
Gly Trp Pro Gly Ser Phe Tyr Glu Phe Tyr Lys Ile Ile Pro Leu Leu	
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act gac ccc aag aac cat ggc ctg agc gat gag cac gtt ttt gaa gtc	702
Thr Asp Pro Lys Asn His Gly Leu Ser Asp Glu His Val Phe Glu Val	
165 170 175 180	
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Ile Cys Pro Ser Ile Pro Gly Tyr Gly Phe Ser Glu Ala Ser Ser Lys	
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aag ggg ttc aac tgc gtg gcc acc gcc agg atc ttt tac aag ctg atg	798
Lys Gly Phe Asn Ser Val Ala Thr Ala Arg Ile Phe Tyr Lys Leu Met	
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ctg cgg ctg ggc ttc cag gaa ttc tac att caa gga ggg gac tgg ggg	846
Leu Arg Leu Gly Phe Gln Glu Phe Tyr Ile Gln Gly Gly Asp Trp Gly	
215 220 225	
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Ser Leu Ile Cys Thr Asn Met Ala Gln Leu Val Pro Ser His Val Lys	
230 235 240	
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Gly Leu His Leu Asn Met Ala Leu Val Leu Ser Asn Phe Ser Thr Leu	
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Thr Leu Leu Leu Gly Gln Arg Phe Gly Arg Phe Leu Gly Leu Thr Glu	
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Arg Asp Val Glu Leu Leu Tyr Pro Val Lys Glu Lys Val Phe Tyr Ser	
280 285 290	
ctg atg agg gag agc ggc tac atg cac atc cag tgc acc aag cct gac	1086
Leu Met Arg Glu Ser Gly Tyr Met His Ile Gln Cys Thr Lys Pro Asp	
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Thr Val Gly Ser Ala Leu Asn Asp Ser Pro Val Gly Leu Ala Ala Tyr	
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att cta gag aag ttt tcc acc tgg acc aat acg gaa ttc cga tac ctg	1182
Ile Leu Glu Lys Phe Ser Thr Trp Thr Asn Thr Glu Phe Arg Tyr Leu	
325 330 335 340	
gag gat gga ggc ctg gaa agg aag ttc tcc ctg gac gac ctg ctg acc	1230
Glu Asp Gly Gly Leu Glu Arg Lys Phe Ser Leu Asp Asp Leu Leu Thr	
345 350 355	
aac gtc atg ctc tac tgg aca aca ggc acc atc atc tcc tcc cag cgc	1278
Asn Val Met Leu Tyr Trp Thr Thr Gly Thr Ile Ile Ser Ser Gln Arg	

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Phe	Tyr	Lys	Glu	Asn	Leu	Gly	Gln	Gly	Trp	Met	Thr	Gln	Lys	His	Glu					
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cgg	atg	aag	gtc	tat	gtg	ccc	act	ggc	ttc	tct	gcc	ttc	cct	ttt	gag	1374				
Arg	Met	Lys	Val	Tyr	Val	Pro	Thr	Gly	Phe	Ser	Ala	Phe	Pro	Phe	Glu					
	390					395					400									
cta	ttg	cac	acg	cct	gaa	aag	tgg	gtg	agg	ttc	aag	tac	cca	aag	ctc	1422				
Leu	Leu	His	Thr	Pro	Glu	Lys	Trp	Val	Arg	Phe	Lys	Tyr	Pro	Lys	Leu					
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atc	tcc	tat	tcc	tac	atg	gtt	cgt	ggg	ggc	cac	ttt	gcg	gcc	ttt	gag	1470				
Ile	Ser	Tyr	Ser	Tyr	Met	Val	Arg	Gly	Gly	His	Phe	Ala	Ala	Phe	Glu					
				425					430					435						
gag	ccg	gag	ctg	ctc	gcc	cag	gac	atc	cgc	aag	ttc	ctg	tcg	gtg	ctg	1518				
Glu	Pro	Glu	Leu	Leu	Ala	Gln	Asp	Ile	Arg	Lys	Phe	Leu	Ser	Val	Leu					
			440					445					450							
gag	cgg	caa	tga	ccccccctc	tccccccgcc	tgccacctcc	ccccacaagt									1570				
Glu	Arg	Gln	*																	
			455																	
gccctccagg	cttttcttgg	ggaagatacc	ccttttctga	ggaatgagtt	tgccctccgtc	1630														
ccctgcccac	gctgggagcc	cacgctcacc	ccctcacccc	tccaagctca	ctcccccaacc	1690														
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<210> 48  
 <211> 455  
 <212> PRT  
 <213> Homo Sapiens

<400> 48

Met	Trp	Leu	Glu	Ile	Leu	Leu	Thr	Ser	Val	Leu	Gly	Phe	Ala	Ile	Tyr
1				5					10					15	
Trp	Phe	Ile	Ser	Arg	Asp	Lys	Glu	Glu	Thr	Leu	Pro	Leu	Glu	Asp	Gly
			20					25					30		
Trp	Trp	Gly	Pro	Gly	Thr	Arg	Ser	Ala	Ala	Arg	Glu	Asp	Asp	Ser	Ile
		35					40					45			
Arg	Pro	Phe	Lys	Val	Glu	Thr	Ser	Asp	Glu	Glu	Ile	His	Asp	Leu	His
	50					55					60				
Gln	Arg	Ile	Asp	Lys	Phe	Arg	Phe	Thr	Pro	Pro	Leu	Glu	Asp	Ser	Cys
65				70					75					80	
Phe	His	Tyr	Gly	Phe	Asn	Ser	Asn	Tyr	Leu	Lys	Lys	Val	Ile	Ser	Tyr
			85					90					95		
Trp	Arg	Asn	Glu	Phe	Asp	Trp	Lys	Lys	Gln	Val	Glu	Ile	Leu	Asn	Arg
		100					105						110		
Tyr	Pro	His	Phe	Lys	Thr	Lys	Ile	Glu	Gly	Leu	Asp	Ile	His	Phe	Ile
		115					120					125			
His	Val	Lys	Pro	Pro	Gln	Leu	Pro	Ala	Gly	His	Thr	Pro	Lys	Pro	Leu
	130					135					140				
Leu	Met	Val	His	Gly	Trp	Pro	Gly	Ser	Phe	Tyr	Glu	Phe	Tyr	Lys	Ile
145					150				155					160	
Ile	Pro	Leu	Leu	Thr	Asp	Pro	Lys	Asn	His	Gly	Leu	Ser	Asp	Glu	His
			165					170					175		
Val	Phe	Glu	Val	Ile	Cys	Pro	Ser	Ile	Pro	Gly	Tyr	Gly	Phe	Ser	Glu
		180						185					190		
Ala	Ser	Ser	Lys	Lys	Gly	Phe	Asn	Ser	Val	Ala	Thr	Ala	Arg	Ile	Phe
		195					200					205			

Tyr	Lys	Leu	Met	Leu	Arg	Leu	Gly	Phe	Gln	Glu	Phe	Tyr	Ile	Gln	Gly
210						215					220				
Gly	Asp	Trp	Gly	Ser	Leu	Ile	Cys	Thr	Asn	Met	Ala	Gln	Leu	Val	Pro
225					230					235					240
Ser	His	Val	Lys	Gly	Leu	His	Leu	Asn	Met	Ala	Leu	Val	Leu	Ser	Asn
				245					250					255	
Phe	Ser	Thr	Leu	Thr	Leu	Leu	Leu	Gly	Gln	Arg	Phe	Gly	Arg	Phe	Leu
			260					265					270		
Gly	Leu	Thr	Glu	Arg	Asp	Val	Glu	Leu	Leu	Tyr	Pro	Val	Lys	Glu	Lys
		275					280					285			
Val	Phe	Tyr	Ser	Leu	Met	Arg	Glu	Ser	Gly	Tyr	Met	His	Ile	Gln	Cys
	290					295					300				
Thr	Lys	Pro	Asp	Thr	Val	Gly	Ser	Ala	Leu	Asn	Asp	Ser	Pro	Val	Gly
305					310					315					320
Leu	Ala	Ala	Tyr	Ile	Leu	Glu	Lys	Phe	Ser	Thr	Trp	Thr	Asn	Thr	Glu
				325					330					335	
Phe	Arg	Tyr	Leu	Glu	Asp	Gly	Gly	Leu	Glu	Arg	Lys	Phe	Ser	Leu	Asp
			340					345					350		
Asp	Leu	Leu	Thr	Asn	Val	Met	Leu	Tyr	Trp	Thr	Thr	Gly	Thr	Ile	Ile
		355					360					365			
Ser	Ser	Gln	Arg	Phe	Tyr	Lys	Glu	Asn	Leu	Gly	Gln	Gly	Trp	Met	Thr
	370					375					380				
Gln	Lys	His	Glu	Arg	Met	Lys	Val	Tyr	Val	Pro	Thr	Gly	Phe	Ser	Ala
385					390					395					400
Phe	Pro	Phe	Glu	Leu	Leu	His	Thr	Pro	Glu	Lys	Trp	Val	Arg	Phe	Lys
				405					410					415	
Tyr	Pro	Lys	Leu	Ile	Ser	Tyr	Ser	Tyr	Met	Val	Arg	Gly	Gly	His	Phe
			420					425					430		
Ala	Ala	Phe	Glu	Glu	Pro	Glu	Leu	Leu	Ala	Gln	Asp	Ile	Arg	Lys	Phe
		435					440					445			
Leu	Ser	Val	Leu	Glu	Arg	Gln									
	450					455									

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 <212> DNA  
 <213> Homo Sapiens

<220>  
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 <222> (249)...(1253)

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 aaaaaaaaaa ggaacctgaa ctttagtaac acagctggaa caatcgcagc ggcggcggca 180  
 gcggcgggag aagagggtta atttagttga ttttctgtgg ttggttggtg ttcgctagtc 240  
 tcacggtg atg gaa gct gca cat ttt ttc gaa ggg acc gag aag ctg ctg 290  
 Met Glu Ala Ala His Phe Phe Glu Gly Thr Glu Lys Leu Leu  
 1 5 10  
 gag gtt tgg ttc tcc cgg cag cag ccc gac gca aac caa gga tct ggg 338  
 Glu Val Trp Phe Ser Arg Gln Gln Pro Asp Ala Asn Gln Gly Ser Gly  
 15 20 25 30  
 gat ctt cgc act atc cca aga tct gag tgg gac ata ctt ttg aag gat 386  
 Asp Leu Arg Thr Ile Pro Arg Ser Glu Trp Asp Ile Leu Leu Lys Asp  
 35 40 45  
 gtg caa tgt tca atc ata agt gtg aca aaa act gac aag cag gaa gct 434  
 Val Gln Cys Ser Ile Ile Ser Val Thr Lys Thr Asp Lys Gln Glu Ala



50					55					60						
tat	gta	ctc	agt	gag	agt	agc	atg	ttt	gtc	tcc	aag	aga	cgt	ttc	att	482
Tyr	Val	Leu	Ser	Glu	Ser	Ser	Met	Phe	Val	Ser	Lys	Arg	Arg	Phe	Ile	
		65					70					75				
ttg	aag	aca	tgt	ggc	acc	acc	ctc	ttg	ctg	aaa	gca	ctg	ggt	ccc	ctg	530
Leu	Lys	Thr	Cys	Gly	Thr	Thr	Leu	Leu	Leu	Lys	Ala	Leu	Val	Pro	Leu	
	80					85					90					
ttg	aag	ctt	gct	agg	gat	tac	agt	ggg	ttt	gac	tca	att	caa	agc	ttc	578
Leu	Lys	Leu	Ala	Arg	Asp	Tyr	Ser	Gly	Phe	Asp	Ser	Ile	Gln	Ser	Phe	
	95				100					105					110	
ttt	tat	tct	cgt	aag	aat	ttc	atg	aag	cct	tct	cac	caa	ggg	tac	cca	626
Phe	Tyr	Ser	Arg	Lys	Asn	Phe	Met	Lys	Pro	Ser	His	Gln	Gly	Tyr	Pro	
				115					120					125		
cac	cgg	aat	ttc	cag	gaa	gaa	ata	gag	ttt	ctt	aat	gca	att	ttc	cca	674
His	Arg	Asn	Phe	Gln	Glu	Glu	Ile	Glu	Phe	Leu	Asn	Ala	Ile	Phe	Pro	
			130					135					140			
aat	gga	gca	gga	tat	tgt	atg	gga	cgt	atg	aat	tct	gac	tgt	tgg	tac	722
Asn	Gly	Ala	Gly	Tyr	Cys	Met	Gly	Arg	Met	Asn	Ser	Asp	Cys	Trp	Tyr	
	145						150					155				
tta	tat	act	ctg	gat	ttc	cca	gag	agt	cgg	gta	atc	agt	cag	cca	gat	770
Leu	Tyr	Thr	Leu	Asp	Phe	Pro	Glu	Ser	Arg	Val	Ile	Ser	Gln	Pro	Asp	
	160					165					170					
caa	acc	ttg	gaa	att	ctg	atg	agt	gag	ctt	gac	cca	gca	ggt	atg	gac	818
Gln	Thr	Leu	Glu	Ile	Leu	Met	Ser	Glu	Leu	Asp	Pro	Ala	Val	Met	Asp	
	175				180					185					190	
cag	ttc	tac	atg	aaa	gat	ggc	ggt	act	gca	aag	gat	gtc	act	cgt	gag	866
Gln	Phe	Tyr	Met	Lys	Asp	Gly	Val	Thr	Ala	Lys	Asp	Val	Thr	Arg	Glu	
				195					200					205		
agt	gga	att	cgt	gac	ctg	ata	cca	ggc	tct	gtc	att	gat	gcc	aca	atg	914
Ser	Gly	Ile	Arg	Asp	Leu	Ile	Pro	Gly	Ser	Val	Ile	Asp	Ala	Thr	Met	
			210					215					220			
ttc	aat	cct	tgt	ggg	tat	tcg	atg	aat	gga	atg	aaa	tcg	gat	gga	act	962
Phe	Asn	Pro	Cys	Gly	Tyr	Ser	Met	Asn	Gly	Met	Lys	Ser	Asp	Gly	Thr	
	225						230					235				
tat	tgg	act	att	cac	atc	act	cca	gaa	cca	gaa	ttt	tct	tat	gtt	agc	1010
Tyr	Trp	Thr	Ile	His	Ile	Thr	Pro	Glu	Pro	Glu	Phe	Ser	Tyr	Val	Ser	
	240					245					250					
ttt	gaa	aca	aac	tta	agt	cag	acc	tcc	tat	gat	gac	ctg	atc	agg	aaa	1058
Phe	Glu	Thr	Asn	Leu	Ser	Gln	Thr	Ser	Tyr	Asp	Asp	Leu	Ile	Arg	Lys	
	255					260				265					270	
ggt	gta	gaa	gtc	ttc	aag	cca	gga	aaa	ttt	gtg	acc	acc	ttg	ttt	gtt	1106
Val	Val	Glu	Val	Phe	Lys	Pro	Gly	Lys	Phe	Val	Thr	Thr	Leu	Phe	Val	
				275					280					285		
aat	cag	agt	tct	aaa	tgt	cgc	aca	gtg	ctt	gct	tcg	ccc	cag	aag	att	1154
Asn	Gln	Ser	Ser	Lys	Cys	Arg	Thr	Val	Leu	Ala	Ser	Pro	Gln	Lys	Ile	
				290				295					300			

gaa ggt ttt aag cgt ctt gat tgc cag agt gct atg ttc aat gat tac 1202  
 Glu Gly Phe Lys Arg Leu Asp Cys Gln Ser Ala Met Phe Asn Asp Tyr  
           305                                  310                                  315

aat ttt gtt ttt acc agt ttt gct aag aag cag caa caa cag cag agt 1250  
 Asn Phe Val Phe Thr Ser Phe Ala Lys Lys Gln Gln Gln Gln Gln Ser  
           320                                  325                                  330

tga ttaagaaaaa tgaagaaaaa acgcaaaaag agaacacatg tagaagggtgg 1303  
 \*

tgatgcttt ctagatgtcg atgctggggg cagtgccttc cataaccacc actgtgtagt 1363  
 tgcagaaagc cctagatgta atgatagtgt aatcattttg aattgtatgc attattatat 1423  
 caaggagtta gatattctgc atgaatgctc tcttctgtgt ttaggtattc tctgccactc 1483  
 ttgctgtgaa attgaagtgg atgtagaaaa aaccttttac tatatgaaac tttacaacac 1543  
 ttgtgaaagc aactcaattt ggtttatgca cagtgttaata tttctccaag tatcatccaa 1603  
 aattccccac agacaaggct ttcgtcctca ttaggtgttg gcctcagcct aaccctctag 1663  
 gactgttcta ttaaattgct gccagaattt tacatccagt tacctccact ttctagaaca 1723  
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 caattaaagt ttttcttcca tg 1805

<210> 50  
 <211> 334  
 <212> PRT  
 <213> Homo Sapiens

<400> 50  
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 Trp Phe Ser Arg Gln Gln Pro Asp Ala Asn Gln Gly Ser Gly Asp Leu  
           20                                  25                                  30  
 Arg Thr Ile Pro Arg Ser Glu Trp Asp Ile Leu Leu Lys Asp Val Gln  
           35                                  40                                  45  
 Cys Ser Ile Ile Ser Val Thr Lys Thr Asp Lys Gln Glu Ala Tyr Val  
   50                                  55                                  60  
 Leu Ser Glu Ser Ser Met Phe Val Ser Lys Arg Phe Ile Leu Lys  
  65                                  70                                  75                                  80  
 Thr Cys Gly Thr Thr Leu Leu Leu Lys Ala Leu Val Pro Leu Leu Lys  
           85                                  90                                  95  
 Leu Ala Arg Asp Tyr Ser Gly Phe Asp Ser Ile Gln Ser Phe Phe Tyr  
          100                                 105                                 110  
 Ser Arg Lys Asn Phe Met Lys Pro Ser His Gln Gly Tyr Pro His Arg  
          115                                 120                                 125  
 Asn Phe Gln Glu Glu Ile Glu Phe Leu Asn Ala Ile Phe Pro Asn Gly  
  130                                 135                                 140  
 Ala Gly Tyr Cys Met Gly Arg Met Asn Ser Asp Cys Trp Tyr Leu Tyr  
 145                                 150                                 155                                 160  
 Thr Leu Asp Phe Pro Glu Ser Arg Val Ile Ser Gln Pro Asp Gln Thr  
          165                                 170                                 175  
 Leu Glu Ile Leu Met Ser Glu Leu Asp Pro Ala Val Met Asp Gln Phe  
          180                                 185                                 190  
 Tyr Met Lys Asp Gly Val Thr Ala Lys Asp Val Thr Arg Glu Ser Gly  
          195                                 200                                 205  
 Ile Arg Asp Leu Ile Pro Gly Ser Val Ile Asp Ala Thr Met Phe Asn  
  210                                 215                                 220  
 Pro Cys Gly Tyr Ser Met Asn Gly Met Lys Ser Asp Gly Thr Tyr Trp  
 225                                 230                                 235                                 240  
 Thr Ile His Ile Thr Pro Glu Pro Glu Phe Ser Tyr Val Ser Phe Glu  
          245                                 250                                 255  
 Thr Asn Leu Ser Gln Thr Ser Tyr Asp Asp Leu Ile Arg Lys Val Val  
          260                                 265                                 270

Glu	Val	Phe	Lys	Pro	Gly	Lys	Phe	Val	Thr	Thr	Leu	Phe	Val	Asn	Gln
		275					280					285			
Ser	Ser	Lys	Cys	Arg	Thr	Val	Leu	Ala	Ser	Pro	Gln	Lys	Ile	Glu	Gly
	290					295					300				
Phe	Lys	Arg	Leu	Asp	Cys	Gln	Ser	Ala	Met	Phe	Asn	Asp	Tyr	Asn	Phe
305					310					315					320
Val	Phe	Thr	Ser	Phe	Ala	Lys	Lys	Gln	Gln	Gln	Gln	Gln	Ser		
				325					330						

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<211> 3707

<212> DNA

<213> Homo Sapiens

<220>

<221> CDS

<222> (231)...(3299)

<400> 51

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ttgggaaatg	aaaaacatct	gcaatgagag	gtaattttat	tctcctcttc	cttttaccct	180
agtctcactc	tccatagtag	gacctggatc	tttgcatacag	agaaaacata	atg aac	236
					Met Asn	
					1	

aat	aac	tgg	aat	gtg	tgt	ttc	ttt	ctt	ttc	tgc	cct	agt	att	act	aga	284
Asn	Asn	Trp	Asn	Val	Cys	Phe	Phe	Leu	Phe	Cys	Pro	Ser	Ile	Thr	Arg	
		5					10					15				

aca	ttt	gca	tcg	gga	aaa	aca	gaa	aag	gtg	atc	ttt	caa	gca	ctc	aag	332
Thr	Phe	Ala	Ser	Gly	Lys	Thr	Glu	Lys	Val	Ile	Phe	Gln	Ala	Leu	Lys	
	20					25					30					

gag	tta	ggt	ctt	ccc	agt	gga	aag	aat	gat	gaa	att	gag	ccc	aca	gca	380
Glu	Leu	Gly	Leu	Pro	Ser	Gly	Lys	Asn	Asp	Glu	Ile	Glu	Pro	Thr	Ala	
35					40					45					50	

ttt	tct	tat	gaa	aag	ttc	tat	gaa	ctg	aca	caa	aag	att	tgt	cct	cgg	428
Phe	Ser	Tyr	Glu	Lys	Phe	Tyr	Glu	Leu	Thr	Gln	Lys	Ile	Cys	Pro	Arg	
			55					60						65		

aca	gat	ata	gaa	gat	ctt	ttc	aaa	aaa	atc	aat	gga	gac	aaa	act	gat	476
Thr	Asp	Ile	Glu	Asp	Leu	Phe	Lys	Lys	Ile	Asn	Gly	Asp	Lys	Thr	Asp	
		70					75						80			

tat	tta	acg	gta	gac	caa	tta	gtg	agc	ttt	cta	aat	gaa	cat	caa	cga	524
Tyr	Leu	Thr	Val	Asp	Gln	Leu	Val	Ser	Phe	Leu	Asn	Glu	His	Gln	Arg	
		85					90					95				

gat	cct	cga	ttg	aat	gaa	att	tta	ttt	cca	ttt	tat	gat	gcc	aaa	agg	572
Asp	Pro	Arg	Leu	Asn	Glu	Ile	Leu	Phe	Pro	Phe	Tyr	Asp	Ala	Lys	Arg	
	100					105					110					

gca	atg	cag	atc	att	gag	atg	tat	gaa	cct	gat	gaa	gat	ttg	aag	aaa	620
Ala	Met	Gln	Ile	Ile	Glu	Met	Tyr	Glu	Pro	Asp	Glu	Asp	Leu	Lys	Lys	
115					120					125					130	

aaa	ggc	ctt	ata	tca	agt	gat	ggg	ttt	tgc	aga	tat	ctg	atg	tca	gat	668
Lys	Gly	Leu	Ile	Ser	Ser	Asp	Gly	Phe	Cys	Arg	Tyr	Leu	Met	Ser	Asp	
				135					140					145		

gaa aac gcc cca gtc ttc cta gat cgt tta gaa ctt tac caa gaa atg	716
Glu Asn Ala Pro Val Phe Leu Asp Arg Leu Glu Leu Tyr Gln Glu Met	
150 155 160	
gac cat cct ctg gct cac tac ttc atc agt tct tcc cat aac act tat	764
Asp His Pro Leu Ala His Tyr Phe Ile Ser Ser Ser His Asn Thr Tyr	
165 170 175	
ctc act ggc aga cag ttc ggc ggg aag tct tcg gta gaa atg tac aga	812
Leu Thr Gly Arg Gln Phe Gly Lys Ser Ser Val Glu Met Tyr Arg	
180 185 190	
cag gtt ctc ctg gct ggt tgc aga tgt gtt gaa ctt gac tgc tgg gat	860
Gln Val Leu Leu Ala Gly Cys Arg Cys Val Glu Leu Asp Cys Trp Asp	
195 200 205 210	
gga aaa ggt gag gac caa gaa cca ata ata act cat gga aaa gca atg	908
Gly Lys Gly Glu Asp Gln Glu Pro Ile Ile Thr His Gly Lys Ala Met	
215 220 225	
tgt aca gat atc ctt ttt aag gat gta att caa gcc atc aag gaa act	956
Cys Thr Asp Ile Leu Phe Lys Asp Val Ile Gln Ala Ile Lys Glu Thr	
230 235 240	
gca ttt gtc aca tca gaa tat cct gta att ctc tcc ttt gaa aat cac	1004
Ala Phe Val Thr Ser Glu Tyr Pro Val Ile Leu Ser Phe Glu Asn His	
245 250 255	
tgc agc aaa tat caa cag tac aag atg tcc aaa tat tgc gaa gat cta	1052
Cys Ser Lys Tyr Gln Gln Tyr Lys Met Ser Lys Tyr Cys Glu Asp Leu	
260 265 270	
ttt ggg gat ctc ctg ttg aaa caa gca ctt gaa tca cat cca ctg gaa	1100
Phe Gly Asp Leu Leu Leu Lys Gln Ala Leu Glu Ser His Pro Leu Glu	
275 280 285 290	
cca ggc aga cct ttg cca tcc ccc aat gac ctc aaa aga aaa ata ctc	1148
Pro Gly Arg Pro Leu Pro Ser Pro Asn Asp Leu Lys Arg Lys Ile Leu	
295 300 305	
ata aaa aac aag cgg ctg aaa cct gaa gtt gaa aaa aaa cag ctg gaa	1196
Ile Lys Asn Lys Arg Leu Lys Pro Glu Val Glu Lys Lys Gln Leu Glu	
310 315 320	
gct ttg aga agc atg atg gaa gct gga gaa tct gcc tcc cca gca aac	1244
Ala Leu Arg Ser Met Met Glu Ala Gly Glu Ser Ala Ser Pro Ala Asn	
325 330 335	
atc tta gag gac gat aat gaa gag gag atc gaa agt gct gac caa gag	1292
Ile Leu Glu Asp Asp Asn Glu Glu Glu Ile Glu Ser Ala Asp Gln Glu	
340 345 350	
gag gaa gct cac ccc gaa ttc aaa ttt gga aat gaa ctt tct gct gat	1340
Glu Glu Ala His Pro Glu Phe Lys Phe Gly Asn Glu Leu Ser Ala Asp	
355 360 365 370	
gac ttg ggt cac aag gaa gct gtt gca aat agc gtc aag aag ggc ctg	1388
Asp Leu Gly His Lys Glu Ala Val Ala Asn Ser Val Lys Lys Gly Leu	
375 380 385	
gtc act gta gaa gat gag cag gcg tgg atg gca tct tat aaa tat gta	1436

Val	Thr	Val	Glu	Asp	Glu	Gln	Ala	Trp	Met	Ala	Ser	Tyr	Lys	Tyr	Val		
			390					395					400				
ggg	gct	acc	act	aat	atc	cat	cca	tat	ttg	tcc	aca	atg	atc	aac	tat	1484	
Gly	Ala	Thr	Thr	Asn	Ile	His	Pro	Tyr	Leu	Ser	Thr	Met	Ile	Asn	Tyr		
		405					410					415					
gcc	cag	cct	gta	aag	ttt	caa	ggg	ttc	cat	gtg	gca	gaa	gaa	cgc	aat	1532	
Ala	Gln	Pro	Val	Lys	Phe	Gln	Gly	Phe	His	Val	Ala	Glu	Glu	Arg	Asn		
		420				425					430						
att	cat	tat	aac	atg	tct	tct	ttt	aat	gaa	tca	gtc	ggg	ctt	ggc	tac	1580	
Ile	His	Tyr	Asn	Met	Ser	Ser	Phe	Asn	Glu	Ser	Val	Gly	Leu	Gly	Tyr		
435					440					445					450		
ttg	aag	aca	cat	gca	att	gaa	ttt	gtc	aat	tat	aac	aaa	cgg	caa	atg	1628	
Leu	Lys	Thr	His	Ala	Ile	Glu	Phe	Val	Asn	Tyr	Asn	Lys	Arg	Gln	Met		
				455					460					465			
agt	cgc	att	tac	ccc	aag	gga	ggc	cga	gtc	gat	tcc	agt	aat	tac	atg	1676	
Ser	Arg	Ile	Tyr	Pro	Lys	Gly	Gly	Arg	Val	Asp	Ser	Ser	Asn	Tyr	Met		
		470						475					480				
cct	cag	att	ttc	tgg	aac	gct	ggc	tgc	cag	atg	gtt	tca	ctg	aac	tat	1724	
Pro	Gln	Ile	Phe	Trp	Asn	Ala	Gly	Cys	Gln	Met	Val	Ser	Leu	Asn	Tyr		
		485					490					495					
caa	acc	cca	gat	tta	gcg	atg	caa	ttg	aat	cag	gga	aaa	ttt	gag	tat	1772	
Gln	Thr	Pro	Asp	Leu	Ala	Met	Gln	Leu	Asn	Gln	Gly	Lys	Phe	Glu	Tyr		
		500					505				510						
aat	gga	tcg	tgc	ggg	tac	ctt	ctc	aaa	cca	gat	ttc	atg	agg	cgg	cct	1820	
Asn	Gly	Ser	Cys	Gly	Tyr	Leu	Leu	Lys	Pro	Asp	Phe	Met	Arg	Arg	Pro		
515					520					525					530		
gat	cga	aca	ttt	gac	ccc	ttc	tct	gaa	acg	cct	gtt	gat	ggg	gtt	att	1868	
Asp	Arg	Thr	Phe	Asp	Pro	Phe	Ser	Glu	Thr	Pro	Val	Asp	Gly	Val	Ile		
				535					540					545			
gca	gcc	act	tgc	tca	gtg	cag	gtt	ata	tca	ggg	caa	ttc	tta	tca	gat	1916	
Ala	Ala	Thr	Cys	Ser	Val	Gln	Val	Ile	Ser	Gly	Gln	Phe	Leu	Ser	Asp		
			550					555					560				
aag	aaa	att	ggc	acc	tac	gta	gag	gtg	gat	atg	tat	ggg	ttg	ccc	act	1964	
Lys	Lys	Ile	Gly	Thr	Tyr	Val	Glu	Val	Asp	Met	Tyr	Gly	Leu	Pro	Thr		
		565					570					575					
gac	acc	ata	cgt	aag	gaa	ttc	cga	act	cgc	atg	gtt	atg	aat	aat	gga	2012	
Asp	Thr	Ile	Arg	Lys	Glu	Phe	Arg	Thr	Arg	Met	Val	Met	Asn	Asn	Gly		
		580				585					590						
ctc	aat	cca	gtt	tac	aat	gaa	gag	tca	ctt	gta	ttt	cgg	aag	gtg	atc	2060	
Leu	Asn	Pro	Val	Tyr	Asn	Glu	Glu	Ser	Leu	Val	Phe	Arg	Lys	Val	Ile		
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Leu	Pro	Asp	Leu	Ala	Val	Leu	Arg	Ile	Ala	Val	Tyr	Asp	Asp	Asn	Asn		
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Lys	Leu	Ile	Gly	Gln	Arg	Ile	Pro	Pro	Leu	Asp	Gly	Leu	Gln	Ala	Gly		
			630					635					640				

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Tyr Arg His Ile Ser Leu Arg Asn Glu Gly Asn Lys Pro Leu Ser Leu	
645 650 655	
cca aca att ttc tgc aat att gtt ctt aaa aca tat gtg cct gat gga	2252
Pro Thr Ile Phe Cys Asn Ile Val Leu Lys Thr Tyr Val Pro Asp Gly	
660 665 670	
ttt gga gat atc gtg gat gct tta tca gat cca aag aca ttt ctc tca	2300
Phe Gly Asp Ile Val Asp Ala Leu Ser Asp Pro Lys Thr Phe Leu Ser	
675 680 685 690	
att aca gaa aag aga gca gac caa atg aga gct atg ggc att gag act	2348
Ile Thr Glu Lys Arg Ala Asp Gln Met Arg Ala Met Gly Ile Glu Thr	
695 700 705	
agt gac ata gcc gac gtg ccc agt gac act tcc aaa aat gac aag aaa	2396
Ser Asp Ile Ala Asp Val Pro Ser Asp Thr Ser Lys Asn Asp Lys Lys	
710 715 720	
gga aag gcc aac acc gcc aaa gca aat gtg acc cct cag agt agc tct	2444
Gly Lys Ala Asn Thr Ala Lys Ala Asn Val Thr Pro Gln Ser Ser Ser	
725 730 735	
gag ctc aga cca acc acc acg gct gcc ctg ccg tct ggt gtg gaa gcc	2492
Glu Leu Arg Pro Thr Thr Thr Ala Ala Leu Pro Ser Gly Val Glu Ala	
740 745 750	
aag aaa ggt att gaa ctt atc cct caa gta agg ata gaa gac tta aag	2540
Lys Lys Gly Ile Glu Leu Ile Pro Gln Val Arg Ile Glu Asp Leu Lys	
755 760 765 770	
cag atg aag gct tac ttg aag cat tta aag aaa cag cag aag gag cta	2588
Gln Met Lys Ala Tyr Leu Lys His Leu Lys Lys Gln Gln Lys Glu Leu	
775 780 785	
aat tct tta aag aag aaa cat gca aag gaa cac agt acc atg cag aag	2636
Asn Ser Leu Lys Lys His Ala Lys Glu His Ser Thr Met Gln Lys	
790 795 800	
tta cac tgc acg caa gtt gac aaa att gtg gca cag tat gac aaa gag	2684
Leu His Cys Thr Gln Val Asp Lys Ile Val Ala Gln Tyr Asp Lys Glu	
805 810 815	
aag tcg act cat gag aaa atc cta gag aag gca atg aag aag aaa ggg	2732
Lys Ser Thr His Glu Lys Ile Leu Glu Lys Ala Met Lys Lys Lys Gly	
820 825 830	
gga agt aat tgt ctt gaa atg aag aaa gaa aca gaa att aaa att cag	2780
Gly Ser Asn Cys Leu Glu Met Lys Lys Glu Thr Glu Ile Lys Ile Gln	
835 840 845 850	
acg ctg aca tca gat cac aaa tct aag gtc aag gag att gta gca cag	2828
Thr Leu Thr Ser Asp His Lys Ser Lys Val Lys Glu Ile Val Ala Gln	
855 860 865	
cac aca aag gaa tgg tca gaa atg atc aat act cac agt gct gag gag	2876
His Thr Lys Glu Trp Ser Glu Met Ile Asn Thr His Ser Ala Glu Glu	
870 875 880	
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Gln	Glu	Ile	Arg	Asp	Leu	His	Leu	Ser	Gln	Gln	Cys	Glu	Leu	Leu	Lys		
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Lys	Leu	Leu	Ile	Asn	Ala	His	Glu	Gln	Gln	Thr	Gln	Gln	Leu	Lys	Leu		
	900					905					910						
tcc	cat	gac	agg	gaa	agc	aag	gaa	atg	cga	gca	cac	cag	gct	aag	att	3020	
Ser	His	Asp	Arg	Glu	Ser	Lys	Glu	Met	Arg	Ala	His	Gln	Ala	Lys	Ile		
915					920					925					930		
tct	atg	gaa	aat	agc	aaa	gcc	atc	agc	caa	gat	aaa	tct	atc	aag	aat	3068	
Ser	Met	Glu	Asn	Ser	Lys	Ala	Ile	Ser	Gln	Asp	Lys	Ser	Ile	Lys	Asn		
				935					940					945			
aaa	gca	gaa	cgg	gaa	agg	cga	gtc	agg	gag	tta	aac	agc	agc	aac	act	3116	
Lys	Ala	Glu	Arg	Glu	Arg	Arg	Val	Arg	Glu	Leu	Asn	Ser	Ser	Asn	Thr		
			950					955					960				
aaa	aag	ttt	ctg	gaa	gaa	aga	aag	aga	ctt	gcc	atg	aag	cag	tcc	aaa	3164	
Lys	Lys	Phe	Leu	Glu	Glu	Arg	Lys	Arg	Leu	Ala	Met	Lys	Gln	Ser	Lys		
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gaa	atg	gat	cag	ttg	aaa	aaa	gtc	cag	ctt	gaa	cat	cta	gaa	ttc	cta	3212	
Glu	Met	Asp	Gln	Leu	Lys	Lys	Val	Gln	Leu	Glu	His	Leu	Glu	Phe	Leu		
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gag	aaa	cag	aat	gag	cag	gcg	aag	gag	atg	cag	cag	atg	gtg	aaa	ttg	3260	
Glu	Lys	Gln	Asn	Glu	Gln	Ala	Lys	Glu	Met	Gln	Gln	Met	Val	Lys	Leu		
	995				1000					1005					1010		
gaa	gcc	gag	atg	gac	cgc	aga	cca	gca	aca	gta	gta	tga	aactccaaaa			3309	
Glu	Ala	Glu	Met	Asp	Arg	Arg	Pro	Ala	Thr	Val	Val	*					
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Leu	Lys	Glu	Leu	Gly	Leu	Pro	Ser	Gly	Lys	Asn	Asp	Glu	Ile	Glu	Pro	
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Thr	Ala	Phe	Ser	Tyr	Glu	Lys	Phe	Tyr	Glu	Leu	Thr	Gln	Lys	Ile	Cys	
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Pro	Arg	Thr	Asp	Ile	Glu	Asp	Leu	Phe	Lys	Lys	Ile	Asn	Gly	Asp	Lys	
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Thr	Asp	Tyr	Leu	Thr	Val	Asp	Gln	Leu	Val	Ser	Phe	Leu	Asn	Glu	His	
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Gln	Arg	Asp	Pro	Arg	Leu	Asn	Glu	Ile	Leu	Phe	Pro	Phe	Tyr	Asp	Ala	

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Lys	Arg	Ala	Met	Gln	Ile	Ile	Glu	Met	Tyr	Glu	Pro	Asp	Glu	Asp	Leu	
		115					120					125				
Lys	Lys	Lys	Gly	Leu	Ile	Ser	Ser	Asp	Gly	Phe	Cys	Arg	Tyr	Leu	Met	
	130					135					140					
Ser	Asp	Glu	Asn	Ala	Pro	Val	Phe	Leu	Asp	Arg	Leu	Glu	Leu	Tyr	Gln	
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Glu	Met	Asp	His	Pro	Leu	Ala	His	Tyr	Phe	Ile	Ser	Ser	Ser	His	Asn	
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Thr	Tyr	Leu	Thr	Gly	Arg	Gln	Phe	Gly	Gly	Lys	Ser	Ser	Val	Glu	Met	
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Tyr	Arg	Gln	Val	Leu	Leu	Ala	Gly	Cys	Arg	Cys	Val	Glu	Leu	Asp	Cys	
	195						200					205				
Trp	Asp	Gly	Lys	Gly	Glu	Asp	Gln	Glu	Pro	Ile	Ile	Thr	His	Gly	Lys	
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Ala	Met	Cys	Thr	Asp	Ile	Leu	Phe	Lys	Asp	Val	Ile	Gln	Ala	Ile	Lys	
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Glu	Thr	Ala	Phe	Val	Thr	Ser	Glu	Tyr	Pro	Val	Ile	Leu	Ser	Phe	Glu	
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Asn	His	Cys	Ser	Lys	Tyr	Gln	Gln	Tyr	Lys	Met	Ser	Lys	Tyr	Cys	Glu	
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Ile	Leu	Ile	Lys	Asn	Lys	Arg	Leu	Lys	Pro	Glu	Val	Glu	Lys	Lys	Gln	
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Gln	Glu	Glu	Glu	Ala	His	Pro	Glu	Phe	Lys	Phe	Gly	Asn	Glu	Leu	Ser	
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Gly	Leu	Val	Thr	Val	Glu	Asp	Glu	Gln	Ala	Trp	Met	Ala	Ser	Tyr	Lys	
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Tyr	Val	Gly	Ala	Thr	Thr	Asn	Ile	His	Pro	Tyr	Leu	Ser	Thr	Met	Ile	
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Asn	Tyr	Ala	Gln	Pro	Val	Lys	Phe	Gln	Gly	Phe	His	Val	Ala	Glu	Glu	
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Arg	Asn	Ile	His	Tyr	Asn	Met	Ser	Ser	Phe	Asn	Glu	Ser	Val	Gly	Leu	
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Gly	Tyr	Leu	Lys	Thr	His	Ala	Ile	Glu	Phe	Val	Asn	Tyr	Asn	Lys	Arg	
	450					455				460						
Gln	Met	Ser	Arg	Ile	Tyr	Pro	Lys	Gly	Gly	Arg	Val	Asp	Ser	Ser	Asn	
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Tyr	Met	Pro	Gln	Ile	Phe	Trp	Asn	Ala	Gly	Cys	Gln	Met	Val	Ser	Leu	
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Asn	Tyr	Gln	Thr	Pro	Asp	Leu	Ala	Met	Gln	Leu	Asn	Gln	Gly	Lys	Phe	
		500						505				510				
Glu	Tyr	Asn	Gly	Ser	Cys	Gly	Tyr	Leu	Leu	Lys	Pro	Asp	Phe	Met	Arg	
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Arg	Pro	Asp	Arg	Thr	Phe	Asp	Pro	Phe	Ser	Glu	Thr	Pro	Val	Asp	Gly	
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Ser	Asp	Lys	Lys	Ile	Gly	Thr	Tyr	Val	Glu	Val	Asp	Met	Tyr	Gly	Leu	
				565					570					575		
Pro	Thr	Asp	Thr	Ile	Arg	Lys	Glu	Phe	Arg	Thr	Arg	Met	Val	Met	Asn	
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<400> 53

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gagacc atg gcc ccc act cag ggc ccc cgg gcc ccg ctg gaa ttc gga 168
      Met Ala Pro Thr Gln Gly Pro Arg Ala Pro Leu Glu Phe Gly
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ggg ccc ctg ggc gcc gcg gct ctg cta ctg ctg ctg ccc gcc acc atg 216
Gly Pro Leu Gly Ala Ala Leu Leu Leu Leu Leu Pro Ala Thr Met
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ttc cac ctg ctc ctg gcg gcc cgt tcg ggc ccc gcg cgc ctg ctg ggt 264
Phe His Leu Leu Leu Ala Ala Arg Ser Gly Pro Ala Arg Leu Leu Gly
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cca ccc gcg tcc ctg ccc ggg ctg gag gtg ctg tgg agc cca cgg gcg 312
Pro Pro Ala Ser Leu Pro Gly Leu Glu Val Leu Trp Ser Pro Arg Ala
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Leu Leu Leu Trp Leu Ala Trp Leu Gly Leu Gln Ala Ala Leu Tyr Leu
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ctg ccg gcg cgc aag gtg gcc gaa ggg cag gaa ttg aag gac aag agt 408
Leu Pro Ala Arg Lys Val Ala Glu Gly Gln Glu Leu Lys Asp Lys Ser
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cgc ctg cgc tat cct att aac ggc ttc cag gcc ctg gtg ctg aca gcc 456
Arg Leu Arg Tyr Pro Ile Asn Gly Phe Gln Ala Leu Val Leu Thr Ala
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ctg ttg gtg ggg ctg ggg atg tca gcg ggg ctg cct ctg ggg gcg ctc 504
Leu Leu Val Gly Leu Gly Met Ser Ala Gly Leu Pro Leu Gly Ala Leu
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ccg gaa atg ctc ctg ccc ttg gcg ttt gtc gcc acc ctc acc gct ttc 552
Pro Glu Met Leu Leu Pro Leu Ala Phe Val Ala Thr Leu Thr Ala Phe
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atc ttc agc ctc ttt ctc tac atg aag gcg cag gta gcc cca gtt tcg 600
Ile Phe Ser Leu Phe Leu Tyr Met Lys Ala Gln Val Ala Pro Val Ser
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gcc ctg gca cct ggg ggg aac tca ggc aat ccg att tac gac ttt ttt 648
Ala Leu Ala Pro Gly Gly Asn Ser Gly Asn Pro Ile Tyr Asp Phe Phe
      160             165             170

ctg gga cga gag ctc aac cct cgt atc tgt ttc ttc gac ttc aaa tat 696
Leu Gly Arg Glu Leu Asn Pro Arg Ile Cys Phe Phe Asp Phe Lys Tyr
      175             180             185             190

ttc tgt gaa ctg cga ccc ggc ctc atc ggc tgg gtc ctc atc aac ctg 744
Phe Cys Glu Leu Arg Pro Gly Leu Ile Gly Trp Val Leu Ile Asn Leu
          195             200             205

gcc ctg ttg atg aag gag gca gag ctt cga ggc agt ccc tca ctg gcc 792
Ala Leu Leu Met Lys Glu Ala Glu Leu Arg Gly Ser Pro Ser Leu Ala
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atg tgg ctg gtc aat ggc ttc cag ttg ctc tac gtg ggt gat gcc ctc 840
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Met	Trp	Leu	Val	Asn	Gly	Phe	Gln	Leu	Leu	Tyr	Val	Gly	Asp	Ala	Leu		
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Trp	His	Glu	Glu	Ala	Val	Leu	Thr	Thr	Met	Asp	Ile	Thr	His	Asp	Gly		
	240					245				250							
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Phe	Gly	Phe	Met	Leu	Ala	Phe	Gly	Asp	Met	Ala	Trp	Val	Pro	Phe	Thr		
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Tyr	Ser	Leu	Gln	Ala	Gln	Phe	Leu	Leu	His	His	Pro	Gln	Pro	Leu	Gly		
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Arg	Lys	Leu	Leu	Val	Ser	Gly	Trp	Trp	Gly	Met	Val	Arg	His	Pro	Asn		
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Tyr	Leu	Gly	Asp	Leu	Ile	Met	Ala	Leu	Ala	Trp	Ser	Leu	Pro	Cys	Gly		
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gtg	tca	cac	ctg	ctg	ccc	tac	ttc	tac	ctc	ctc	tac	ttc	acc	gcg	ctg	1272	
Val	Ser	His	Leu	Leu	Pro	Tyr	Phe	Tyr	Leu	Leu	Tyr	Phe	Thr	Ala	Leu		
			370					375					380				
ctg	gtg	cac	cgt	gag	gcc	cgg	gat	gag	cgg	cag	tgc	ctg	cag	aag	tac	1320	
Leu	Val	His	Arg	Glu	Ala	Arg	Asp	Glu	Arg	Gln	Cys	Leu	Gln	Lys	Tyr		
		385				390					395						
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Gly	Leu	Ala	Trp	Gln	Glu	Tyr	Cys	Arg	Arg	Val	Pro	Tyr	Arg	Ile	Met		
	400				405					410							
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Pro	Tyr	Ile	Tyr	*													
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Gly Gly Ser Glu Pro Glu Arg Glu Val Val Val Pro Ile Arg Leu Asp	
20 25 30	
ccg gac att aac ggc cgc cgc tac tac tgg cgg ggt ccc gag gac tcc	144
Pro Asp Ile Asn Gly Arg Arg Tyr Tyr Trp Arg Gly Pro Glu Asp Ser	
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ggg gat cag gga ctc att ttt cag atc aca gca ttt cag gag gac ttt	192
Gly Asp Gln Gly Leu Ile Phe Gln Ile Thr Ala Phe Gln Glu Asp Phe	
50 55 60	
tac cta cac ctg acg ccg gat gct cag ttc ttg gct ccc gcc ttc tcc	240
Tyr Leu His Leu Thr Pro Asp Ala Gln Phe Leu Ala Pro Ala Phe Ser	
65 70 75 80	
act gag cat ctg ggc gtc ccc ctc cag ggg ctc acc ggg ggc tct tca	288
Thr Glu His Leu Gly Val Pro Leu Gln Gly Leu Thr Gly Gly Ser Ser	
85 90 95	
gac ctg cga cgc tgc ttc tat tct ggg gac gtg aac gcc gag ccg gac	336
Asp Leu Arg Arg Cys Phe Tyr Ser Gly Asp Val Asn Ala Glu Pro Asp	
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Ser Phe Ala Ala Val Ser Leu Cys Gly Gly Leu Arg Gly Ala Phe Gly	
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tac cga ggc gcc gag tat gtc att agc ccg ctg ccc aat gct agc gcg	432
Tyr Arg Gly Ala Glu Tyr Val Ile Ser Pro Leu Pro Asn Ala Ser Ala	
130 135 140	
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Pro Ala Ala Gln Arg Asn Ser Gln Gly Ala His Leu Leu Gln Arg Arg	
145 150 155 160	
ggt gtt ccg ggc ggg cct tcc gga gac ccc acc tct cgc tgc ggg gtg	528
Gly Val Pro Gly Gly Pro Ser Gly Asp Pro Thr Ser Arg Cys Gly Val	
165 170 175	
gcc tcg ggc tgg aac ccc gcc atc cta cgg gcc ctg gac cct tac aag	576
Ala Ser Gly Trp Asn Pro Ala Ile Leu Arg Ala Leu Asp Pro Tyr Lys	
180 185 190	
ccg cgg cgg gcg ggc ttc ggg gag agt cgt agc cgg cgc agg tct ggg	624
Pro Arg Arg Ala Gly Phe Gly Glu Ser Arg Ser Arg Arg Arg Ser Gly	
195 200 205	
cgc gcc aag cgt ttc gtg tct atc ccg cgg tac gtg gag acg ctg gtg	672
Arg Ala Lys Arg Phe Val Ser Ile Pro Arg Tyr Val Glu Thr Leu Val	
210 215 220	
gtc gcg gac gag tca atg gtc aag ttc cac ggc gcg gac ctg gaa cat	720
Val Ala Asp Glu Ser Met Val Lys Phe His Gly Ala Asp Leu Glu His	
225 230 235 240	
tat ctg ctg acg ctg ctg gca acg gcg gcg cga .ctc tac cgc cat ccc	768

Tyr	Leu	Leu	Thr	Leu	Leu	Ala	Thr	Ala	Ala	Arg	Leu	Tyr	Arg	His	Pro	
				245					250					255		
agc	atc	ctc	aac	ccc	atc	aac	atc	gtt	gtg	gtc	aag	gtg	ctg	ctt	ctt	816
Ser	Ile	Leu	Asn	Pro	Ile	Asn	Ile	Val	Val	Val	Lys	Val	Leu	Leu	Leu	
			260					265					270			
aga	gat	cgt	gac	tcc	ggg	ccc	aag	gtc	acc	ggc	aat	gcg	gcc	ctg	acg	864
Arg	Asp	Arg	Asp	Ser	Gly	Pro	Lys	Val	Thr	Gly	Asn	Ala	Ala	Leu	Thr	
		275					280					285				
ctg	cgc	aac	ttc	tgt	gcc	tgg	cag	aag	aag	ctg	aac	aaa	gtg	agt	gac	912
Leu	Arg	Asn	Phe	Cys	Ala	Trp	Gln	Lys	Lys	Leu	Asn	Lys	Val	Ser	Asp	
	290					295					300					
aag	cac	ccc	gag	tac	tgg	gac	act	gcc	atc	ctc	ttc	acc	agg	cag	gac	960
Lys	His	Pro	Glu	Tyr	Trp	Asp	Thr	Ala	Ile	Leu	Phe	Thr	Arg	Gln	Asp	
305					310					315					320	
ctg	tgt	gga	gcc	acc	acc	tgt	gac	acc	ctg	ggc	atg	gct	gat	gtg	ggc	1008
Leu	Cys	Gly	Ala	Thr	Thr	Cys	Asp	Thr	Leu	Gly	Met	Ala	Asp	Val	Gly	
				325					330					335		
acc	atg	tgt	gac	ccc	aag	aga	agc	tgc	tct	gtc	att	gag	gac	gat	ggg	1056
Thr	Met	Cys	Asp	Pro	Lys	Arg	Ser	Cys	Ser	Val	Ile	Glu	Asp	Asp	Gly	
			340					345					350			
ctt	cca	tca	gcc	ttc	acc	act	gcc	cac	gag	ctg	ggc	cac	gtg	ttc	aac	1104
Leu	Pro	Ser	Ala	Phe	Thr	Thr	Ala	His	Glu	Leu	Gly	His	Val	Phe	Asn	
		355					360					365				
atg	ccc	cat	gac	aat	gtg	aaa	gtc	tgt	gag	gag	gtg	ttt	ggg	aag	ctc	1152
Met	Pro	His	Asp	Asn	Val	Lys	Val	Cys	Glu	Glu	Val	Phe	Gly	Lys	Leu	
	370					375					380					
cga	gcc	aac	cac	atg	atg	tcc	ccg	acc	ctc	atc	cag	atc	gac	cgt	gcc	1200
Arg	Ala	Asn	His	Met	Met	Ser	Pro	Thr	Leu	Ile	Gln	Ile	Asp	Arg	Ala	
385					390					395					400	
aac	ccc	tgg	tca	gcc	tgc	agt	gct	gcc	atc	atc	acc	gac	ttc	ctg	gac	1248
Asn	Pro	Trp	Ser	Ala	Cys	Ser	Ala	Ala	Ile	Ile	Thr	Asp	Phe	Leu	Asp	
				405					410					415		
agc	ggg	cac	ggt	gac	tgc	ctc	ctg	gac	caa	ccc	agc	aag	ccc	atc	tcc	1296
Ser	Gly	His	Gly	Asp	Cys	Leu	Leu	Asp	Gln	Pro	Ser	Lys	Pro	Ile	Ser	
			420					425					430			
ctg	ccc	gag	gat	ctg	ccg	ggc	gcc	agc	tac	acc	ctg	agc	cag	cag	tgc	1344
Leu	Pro	Glu	Asp	Leu	Pro	Gly	Ala	Ser	Tyr	Thr	Leu	Ser	Gln	Gln	Cys	
		435					440					445				
gag	ctg	gct	ttt	ggc	gtg	ggc	tcc	aag	ccc	tgt	cct	tac	atg	cag	tac	1392
Glu	Leu	Ala	Phe	Gly	Val	Gly	Ser	Lys	Pro	Cys	Pro	Tyr	Met	Gln	Tyr	
	450					455					460					
tgc	acc	aag	ctg	tgg	tgc	acc	ggg	aag	gcc	aag	gga	cag	atg	gtg	tgc	1440
Cys	Thr	Lys	Leu	Trp	Cys	Thr	Gly	Lys	Ala	Lys	Gly	Gln	Met	Val	Cys	
465					470				475						480	
cag	acc	cgc	cac	ttc	ccc	tgg	gcc	gat	ggc	acc	agc	tgt	ggc	gag	ggc	1488
Gln	Thr	Arg	His	Phe	Pro	Trp	Ala	Asp	Gly	Thr	Ser	Cys	Gly	Glu	Gly	
			485						490					495		

aag ctc tgc ctc aaa ggg gcc tgc gtg gag aga cac aac ctc aac aag	1536
Lys Leu Cys Leu Lys Gly Ala Cys Val Glu Arg His Asn Leu Asn Lys	
500 505 510	
cac agg gtg gat ggt tcc tgg gcc aaa tgg gat ccc tat ggc ccc tgc	1584
His Arg Val Asp Gly Ser Trp Ala Lys Trp Asp Pro Tyr Gly Pro Cys	
515 520 525	
tcg cgc aca tgt ggt ggg ggc gtg cag ctg gcc agg agg cag tgc acc	1632
Ser Arg Thr Cys Gly Gly Gly Val Gln Leu Ala Arg Arg Gln Cys Thr	
530 535 540	
aac ccc acc cct gcc aac ggg ggc aag tac tgc gag gga gtg agg gtg	1680
Asn Pro Thr Pro Ala Asn Gly Gly Lys Tyr Cys Glu Gly Val Arg Val	
545 550 555 560	
aaa tac cga tcc tgc aat ctg gag ccc tgc ccc agc tca gcc tcc gga	1728
Lys Tyr Arg Ser Cys Asn Leu Glu Pro Cys Pro Ser Ser Ala Ser Gly	
565 570 575	
aag agc ttc cgg gag gag cag tgt gag gct ttc aac ggc tac aac cac	1776
Lys Ser Phe Arg Glu Glu Gln Cys Glu Ala Phe Asn Gly Tyr Asn His	
580 585 590	
agc acc aac cgg ctc act ctc gcc gtg gca tgg gtg ccc aag tac tcc	1824
Ser Thr Asn Arg Leu Thr Leu Ala Val Ala Trp Val Pro Lys Tyr Ser	
595 600 605	
ggc gtg tct ccc cgg gac aag tgc aag ctc atc tgc cga gcc aat ggc	1872
Gly Val Ser Pro Arg Asp Lys Cys Lys Leu Ile Cys Arg Ala Asn Gly	
610 615 620	
act ggc tac ttc tat gtg ctg gca ccc aag gtg gtg gac ggc acg ctg	1920
Thr Gly Tyr Phe Tyr Val Leu Ala Pro Lys Val Val Asp Gly Thr Leu	
625 630 635 640	
tgc tct cct gac tcc acc tcc gtc tgt gtc caa ggc aag tgc atc aag	1968
Cys Ser Pro Asp Ser Thr Ser Val Cys Val Gln Gly Lys Cys Ile Lys	
645 650 655	
gct ggc tgt gat ggg aac ctg ggc tcc aag aag aga ttc gac aag tgt	2016
Ala Gly Cys Asp Gly Asn Leu Gly Ser Lys Lys Arg Phe Asp Lys Cys	
660 665 670	
ggg gtg tgt ggg gga gac aat aag agc tgc aag aag gtg act gga ctc	2064
Gly Val Cys Gly Gly Asp Asn Lys Ser Cys Lys Lys Val Thr Gly Leu	
675 680 685	
ttc acc aag ccc atg cat ggc tac aat ttc gtg gtg gcc atc ccc gca	2112
Phe Thr Lys Pro Met His Gly Tyr Asn Phe Val Val Ala Ile Pro Ala	
690 695 700	
ggc gcc tca agc atc gac atc cgc cag cgc ggt tac aaa ggg ctg atc	2160
Gly Ala Ser Ser Ile Asp Ile Arg Gln Arg Gly Tyr Lys Gly Leu Ile	
705 710 715 720	
ggg gat gac aac tac ctg gct ctg aag aac agc caa ggc aag tac ctg	2208
Gly Asp Asp Asn Tyr Leu Ala Leu Lys Asn Ser Gln Gly Lys Tyr Leu	
725 730 735	
ctc aac ggg cat ttc gtg gtg tcg gcg gtg gag cgg gac ctg gtg gtg	2256

Leu Asn Gly His Phe Val Val Ser Ala Val Glu Arg Asp Leu Val Val	
740 745 750	
aag ggc agt ctg ctg cgg tac agc ggc acg ggc aca gcg gtg gag agc	2304
Lys Gly Ser Leu Leu Arg Tyr Ser Gly Thr Gly Thr Ala Val Glu Ser	
755 760 765	
ctg cag gct tcc cgg ccc atc ctg gag ccg ctg acc gtg gag gtc ctc	2352
Leu Gln Ala Ser Arg Pro Ile Leu Glu Pro Leu Thr Val Glu Val Leu	
770 775 780	
tcc gtg ggg aag atg aca ccg ccc cgg gtc cgc tac tcc ttc tat ctg	2400
Ser Val Gly Lys Met Thr Pro Pro Arg Val Arg Tyr Ser Phe Tyr Leu	
785 790 795 800	
ccc aaa gag cct cgg gag gac aag tcc tct cat ccc aag gac ccc cgg	2448
Pro Lys Glu Pro Arg Glu Asp Lys Ser Ser His Pro Lys Asp Pro Arg	
805 810 815	
gga ccc tct gtc ttg cac aac agc gtc ctc agc ctc tcc aac cag gtg	2496
Gly Pro Ser Val Leu His Asn Ser Val Leu Ser Leu Ser Asn Gln Val	
820 825 830	
gag cag ccg gac gac agg ccc cct gca cgc tgg gtg gct ggc agc tgg	2544
Glu Gln Pro Asp Asp Arg Pro Pro Ala Arg Trp Val Ala Gly Ser Trp	
835 840 845	
ggg ccg tgc tcc gcg agc tgc ggc agt ggc ctg cag aag cgg gcg gtg	2592
Gly Pro Cys Ser Ala Ser Cys Gly Ser Gly Leu Gln Lys Arg Ala Val	
850 855 860	
gac tgc ccg ggc tcc gcc ggg cag cgc acg gtc cct gcc tgt gat gca	2640
Asp Cys Arg Gly Ser Ala Gly Gln Arg Thr Val Pro Ala Cys Asp Ala	
865 870 875 880	
gcc cat ccg ccc gtg gag aca caa gcc tgc ggg gag ccc tgc ccc acc	2688
Ala His Arg Pro Val Glu Thr Gln Ala Cys Gly Glu Pro Cys Pro Thr	
885 890 895	
tgg gag ctc agc gcc tgg tca ccc tgc tcc aag agc tgc ggc cgg gga	2736
Trp Glu Leu Ser Ala Trp Ser Pro Cys Ser Lys Ser Cys Gly Arg Gly	
900 905 910	
ttt cag agg cgc tca ctc aag tgt gtg ggc cac gga ggc cgg ctg ctg	2784
Phe Gln Arg Arg Ser Leu Lys Cys Val Gly His Gly Gly Arg Leu Leu	
915 920 925	
gcc ccg gac cag tgc aac ttg cac cgc aag ccc cag gag ctg gac ttc	2832
Ala Arg Asp Gln Cys Asn Leu His Arg Lys Pro Gln Glu Leu Asp Phe	
930 935 940	
tgc gtc ctg agg ccg tgc tga	2853
Cys Val Leu Arg Pro Cys *	
945 950	

<210> 56  
 <211> 950  
 <212> PRT  
 <213> Homo Sapiens

<400> 56



Met	Leu	Leu	Leu	Gly	Ile	Leu	Thr	Leu	Ala	Phe	Ala	Gly	Arg	Thr	Ala
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Gly	Gly	Ser	Glu	Pro	Glu	Arg	Glu	Val	Val	Pro	Ile	Arg	Leu	Asp	
			20					25				30			
Pro	Asp	Ile	Asn	Gly	Arg	Arg	Tyr	Tyr	Trp	Arg	Gly	Pro	Glu	Asp	Ser
		35					40				45				
Gly	Asp	Gln	Gly	Leu	Ile	Phe	Gln	Ile	Thr	Ala	Phe	Gln	Glu	Asp	Phe
	50					55				60					
Tyr	Leu	His	Leu	Thr	Pro	Asp	Ala	Gln	Phe	Leu	Ala	Pro	Ala	Phe	Ser
65					70				75					80	
Thr	Glu	His	Leu	Gly	Val	Pro	Leu	Gln	Gly	Leu	Thr	Gly	Gly	Ser	Ser
				85					90					95	
Asp	Leu	Arg	Arg	Cys	Phe	Tyr	Ser	Gly	Asp	Val	Asn	Ala	Glu	Pro	Asp
			100					105					110		
Ser	Phe	Ala	Ala	Val	Ser	Leu	Cys	Gly	Gly	Leu	Arg	Gly	Ala	Phe	Gly
		115					120					125			
Tyr	Arg	Gly	Ala	Glu	Tyr	Val	Ile	Ser	Pro	Leu	Pro	Asn	Ala	Ser	Ala
	130					135					140				
Pro	Ala	Ala	Gln	Arg	Asn	Ser	Gln	Gly	Ala	His	Leu	Leu	Gln	Arg	Arg
145					150				155					160	
Gly	Val	Pro	Gly	Gly	Pro	Ser	Gly	Asp	Pro	Thr	Ser	Arg	Cys	Gly	Val
				165					170					175	
Ala	Ser	Gly	Trp	Asn	Pro	Ala	Ile	Leu	Arg	Ala	Leu	Asp	Pro	Tyr	Lys
			180					185					190		
Pro	Arg	Arg	Ala	Gly	Phe	Gly	Glu	Ser	Arg	Ser	Arg	Arg	Arg	Ser	Gly
			195				200					205			
Arg	Ala	Lys	Arg	Phe	Val	Ser	Ile	Pro	Arg	Tyr	Val	Glu	Thr	Leu	Val
	210					215					220				
Val	Ala	Asp	Glu	Ser	Met	Val	Lys	Phe	His	Gly	Ala	Asp	Leu	Glu	His
225					230				235					240	
Tyr	Leu	Leu	Thr	Leu	Leu	Ala	Thr	Ala	Ala	Arg	Leu	Tyr	Arg	His	Pro
				245					250					255	
Ser	Ile	Leu	Asn	Pro	Ile	Asn	Ile	Val	Val	Val	Lys	Val	Leu	Leu	Leu
			260					265					270		
Arg	Asp	Arg	Asp	Ser	Gly	Pro	Lys	Val	Thr	Gly	Asn	Ala	Ala	Leu	Thr
		275					280					285			
Leu	Arg	Asn	Phe	Cys	Ala	Trp	Gln	Lys	Lys	Leu	Asn	Lys	Val	Ser	Asp
	290					295					300				
Lys	His	Pro	Glu	Tyr	Trp	Asp	Thr	Ala	Ile	Leu	Phe	Thr	Arg	Gln	Asp
305					310					315				320	
Leu	Cys	Gly	Ala	Thr	Thr	Cys	Asp	Thr	Leu	Gly	Met	Ala	Asp	Val	Gly
				325					330					335	
Thr	Met	Cys	Asp	Pro	Lys	Arg	Ser	Cys	Ser	Val	Ile	Glu	Asp	Asp	Gly
			340					345					350		
Leu	Pro	Ser	Ala	Phe	Thr	Thr	Ala	His	Glu	Leu	Gly	His	Val	Phe	Asn
		355					360					365			
Met	Pro	His	Asp	Asn	Val	Lys	Val	Cys	Glu	Glu	Val	Phe	Gly	Lys	Leu
	370					375					380				
Arg	Ala	Asn	His	Met	Met	Ser	Pro	Thr	Leu	Ile	Gln	Ile	Asp	Arg	Ala
385					390					395				400	
Asn	Pro	Trp	Ser	Ala	Cys	Ser	Ala	Ala	Ile	Ile	Thr	Asp	Phe	Leu	Asp
				405					410					415	
Ser	Gly	His	Gly	Asp	Cys	Leu	Leu	Asp	Gln	Pro	Ser	Lys	Pro	Ile	Ser
			420					425					430		
Leu	Pro	Glu	Asp	Leu	Pro	Gly	Ala	Ser	Tyr	Thr	Leu	Ser	Gln	Gln	Cys
		435					440					445			
Glu	Leu	Ala	Phe	Gly	Val	Gly	Ser	Lys	Pro	Cys	Pro	Tyr	Met	Gln	Tyr
	450					455					460				
Cys	Thr	Lys	Leu	Trp	Cys	Thr	Gly	Lys	Ala	Lys	Gly	Gln	Met	Val	Cys
465					470				475					480	
Gln	Thr	Arg	His	Phe	Pro	Trp	Ala	Asp	Gly	Thr	Ser	Cys	Gly	Glu	Gly
				485					490					495	

Lys	Leu	Cys	Leu	Lys	Gly	Ala	Cys	Val	Glu	Arg	His	Asn	Leu	Asn	Lys	500	505	510
His	Arg	Val	Asp	Gly	Ser	Trp	Ala	Lys	Trp	Asp	Pro	Tyr	Gly	Pro	Cys	515	520	525
Ser	Arg	Thr	Cys	Gly	Gly	Gly	Val	Gln	Leu	Ala	Arg	Arg	Gln	Cys	Thr	530	535	540
Asn	Pro	Thr	Pro	Ala	Asn	Gly	Gly	Lys	Tyr	Cys	Glu	Gly	Val	Arg	Val	545	550	555
Lys	Tyr	Arg	Ser	Cys	Asn	Leu	Glu	Pro	Cys	Pro	Ser	Ser	Ala	Ser	Gly	565	570	575
Lys	Ser	Phe	Arg	Glu	Glu	Gln	Cys	Glu	Ala	Phe	Asn	Gly	Tyr	Asn	His	580	585	590
Ser	Thr	Asn	Arg	Leu	Thr	Leu	Ala	Val	Ala	Trp	Val	Pro	Lys	Tyr	Ser	595	600	605
Gly	Val	Ser	Pro	Arg	Asp	Lys	Cys	Lys	Leu	Ile	Cys	Arg	Ala	Asn	Gly	610	615	620
Thr	Gly	Tyr	Phe	Tyr	Val	Leu	Ala	Pro	Lys	Val	Val	Asp	Gly	Thr	Leu	625	630	635
Cys	Ser	Pro	Asp	Ser	Thr	Ser	Val	Cys	Val	Gln	Gly	Lys	Cys	Ile	Lys	645	650	655
Ala	Gly	Cys	Asp	Gly	Asn	Leu	Gly	Ser	Lys	Lys	Arg	Phe	Asp	Lys	Cys	660	665	670
Gly	Val	Cys	Gly	Gly	Asp	Asn	Lys	Ser	Cys	Lys	Lys	Val	Thr	Gly	Leu	675	680	685
Phe	Thr	Lys	Pro	Met	His	Gly	Tyr	Asn	Phe	Val	Val	Ala	Ile	Pro	Ala	690	695	700
Gly	Ala	Ser	Ser	Ile	Asp	Ile	Arg	Gln	Arg	Gly	Tyr	Lys	Gly	Leu	Ile	705	710	715
Gly	Asp	Asp	Asn	Tyr	Leu	Ala	Leu	Lys	Asn	Ser	Gln	Gly	Lys	Tyr	Leu	725	730	735
Leu	Asn	Gly	His	Phe	Val	Val	Ser	Ala	Val	Glu	Arg	Asp	Leu	Val	Val	740	745	750
Lys	Gly	Ser	Leu	Leu	Arg	Tyr	Ser	Gly	Thr	Gly	Thr	Ala	Val	Glu	Ser	755	760	765
Leu	Gln	Ala	Ser	Arg	Pro	Ile	Leu	Glu	Pro	Leu	Thr	Val	Glu	Val	Leu	770	775	780
Ser	Val	Gly	Lys	Met	Thr	Pro	Pro	Arg	Val	Arg	Tyr	Ser	Phe	Tyr	Leu	785	790	795
Pro	Lys	Glu	Pro	Arg	Glu	Asp	Lys	Ser	Ser	His	Pro	Lys	Asp	Pro	Arg	805	810	815
Gly	Pro	Ser	Val	Leu	His	Asn	Ser	Val	Leu	Ser	Leu	Ser	Asn	Gln	Val	820	825	830
Glu	Gln	Pro	Asp	Asp	Arg	Pro	Pro	Ala	Arg	Trp	Val	Ala	Gly	Ser	Trp	835	840	845
Gly	Pro	Cys	Ser	Ala	Ser	Cys	Gly	Ser	Gly	Leu	Gln	Lys	Arg	Ala	Val	850	855	860
Asp	Cys	Arg	Gly	Ser	Ala	Gly	Gln	Arg	Thr	Val	Pro	Ala	Cys	Asp	Ala	865	870	875
Ala	His	Arg	Pro	Val	Glu	Thr	Gln	Ala	Cys	Gly	Glu	Pro	Cys	Pro	Thr	885	890	895
Trp	Glu	Leu	Ser	Ala	Trp	Ser	Pro	Cys	Ser	Lys	Ser	Cys	Gly	Arg	Gly	900	905	910
Phe	Gln	Arg	Arg	Ser	Leu	Lys	Cys	Val	Gly	His	Gly	Gly	Arg	Leu	Leu	915	920	925
Ala	Arg	Asp	Gln	Cys	Asn	Leu	His	Arg	Lys	Pro	Gln	Glu	Leu	Asp	Phe	930	935	940
Cys	Val	Leu	Arg	Pro	Cys											945	950	

<210> 57

<211> 2481

<212> DNA  
 <213> Homo Sapiens

<220>  
 <221> CDS  
 <222> (110)...(1906)

<400> 57

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 tgagactcgg ggcgccagtc cgggcagggg cagcgggagc cggccggag atg ccc tgt 118  
 Met Pro Cys  
 1

atc caa gcc caa tat ggg aca cca gca ccg agt ccg gga ccc cgt gac 166  
 Ile Gln Ala Gln Tyr Gly Thr Pro Ala Pro Ser Pro Gly Pro Arg Asp  
 5 10 15

cac ctg gca agc gac ccc ctg acc cct gag ttc atc aag ccc acc atg 214  
 His Leu Ala Ser Asp Pro Leu Thr Pro Glu Phe Ile Lys Pro Thr Met  
 20 25 30 35

gac ctg gcc agc ccc gag gca gcc ccc gct gcc ccc act gcc ctg ccc 262  
 Asp Leu Ala Ser Pro Glu Ala Ala Pro Ala Ala Pro Thr Ala Leu Pro  
 40 45 50

agc ttc agc acc ttc atg gac ggc tac aca gga gag ttt gac acc ttc 310  
 Ser Phe Ser Thr Phe Met Asp Gly Tyr Thr Gly Glu Phe Asp Thr Phe  
 55 60 65

ctc tac cag ctg cca gga aca gtc cag cca tgc tcc tca gcc tcc tcc 358  
 Leu Tyr Gln Leu Pro Gly Thr Val Gln Pro Cys Ser Ser Ala Ser Ser  
 70 75 80

tcg gcc tcc tcc aca tcc tcg tcc tca gcc acc tcc cct gcc tct gct 406  
 Ser Ala Ser Ser Thr Ser Ser Ser Ser Ala Thr Ser Pro Ala Ser Ala  
 85 90 95

tcc ttc aag ttc gag gac ttc cag gtg tac ggc tgc tac ccc ggc ccc 454  
 Ser Phe Lys Phe Glu Asp Phe Gln Val Tyr Gly Cys Tyr Pro Gly Pro  
 100 105 110 115

ctg agc ggc cca gtg gat gag gcc ctg tcc tcc agt ggc tct gac tac 502  
 Leu Ser Gly Pro Val Asp Glu Ala Leu Ser Ser Ser Gly Ser Asp Tyr  
 120 125 130

tat ggc agc ccc tgc tcg gcc ccg tcg ccc tcc acg ccc agc ttc cag 550  
 Tyr Gly Ser Pro Cys Ser Ala Pro Ser Pro Ser Thr Pro Ser Phe Gln  
 135 140 145

ccg ccc cag ctc tct ccc tgg gat ggc tcc ttc ggc cac ttc tcg ccc 598  
 Pro Pro Gln Leu Ser Pro Trp Asp Gly Ser Phe Gly His Phe Ser Pro  
 150 155 160

agc cag act tac gaa ggc ctg cgg gca tgg aca gag cag ctg ccc aaa 646  
 Ser Gln Thr Tyr Glu Gly Leu Arg Ala Trp Thr Glu Gln Leu Pro Lys  
 165 170 175

gcc tct ggg ccc cca cag cct cca gcc ttc ttt tcc ttc agt cct ccc 694  
 Ala Ser Gly Pro Pro Gln Pro Pro Ala Phe Phe Ser Phe Ser Pro Pro  
 180 185 190 195

acc ggc ccc agc ccc agc ctg gcc cag agc ccc ctg aag ttg ttc ccc 742

Thr	Gly	Pro	Ser	Pro	Ser	Leu	Ala	Gln	Ser	Pro	Leu	Lys	Leu	Phe	Pro		
				200					205					210			
tca	cag	gcc	acc	cac	cag	ctg	ggg	gag	gga	gag	agc	tat	tcc	atg	cct	790	
Ser	Gln	Ala	Thr	His	Gln	Leu	Gly	Glu	Gly	Glu	Ser	Tyr	Ser	Met	Pro		
			215					220					225				
acg	gcc	ttc	cca	ggc	ttg	gca	ccc	act	tct	cca	cac	ctt	gag	ggc	tcg	838	
Thr	Ala	Phe	Pro	Gly	Leu	Ala	Pro	Thr	Ser	Pro	His	Leu	Glu	Gly	Ser		
		230					235					240					
ggg	ata	ctg	gat	aca	ccc	gtg	acc	tca	acc	aag	gcc	cgg	agc	ggg	gcc	886	
Gly	Ile	Leu	Asp	Thr	Pro	Val	Thr	Ser	Thr	Lys	Ala	Arg	Ser	Gly	Ala		
	245					250					255						
cca	ggc	gga	agt	gaa	ggc	cgc	tgt	gct	gtg	tgt	ggg	gac	aac	gct	tca	934	
Pro	Gly	Gly	Ser	Glu	Gly	Arg	Cys	Ala	Val	Cys	Gly	Asp	Asn	Ala	Ser		
260					265				270					275			
tgc	cag	cat	tat	ggc	gtc	cgc	aca	tgt	gag	ggc	tgc	aag	ggc	ttc	ttc	982	
Cys	Gln	His	Tyr	Gly	Val	Arg	Thr	Cys	Glu	Gly	Cys	Lys	Gly	Phe	Phe		
				280					285					290			
aag	cgc	aca	gtg	cag	aaa	aac	gcc	aag	tac	atc	tgc	ctg	gct	aac	aag	1030	
Lys	Arg	Thr	Val	Gln	Lys	Asn	Ala	Lys	Tyr	Ile	Cys	Leu	Ala	Asn	Lys		
			295					300					305				
gac	tgc	cct	gtg	gac	aag	agg	cgg	cga	aac	cgc	tgc	cag	ttc	tgc	cgc	1078	
Asp	Cys	Pro	Val	Asp	Lys	Arg	Arg	Arg	Asn	Arg	Cys	Gln	Phe	Cys	Arg		
		310					315					320					
ttc	cag	aag	tgc	ctg	gcg	gtg	ggc	atg	gtg	aag	gaa	gtt	gtc	cga	aca	1126	
Phe	Gln	Lys	Cys	Leu	Ala	Val	Gly	Met	Val	Lys	Glu	Val	Val	Arg	Thr		
	325					330					335						
gac	agc	ctg	aag	ggg	cgg	cgg	ggc	cgg	cta	cct	tca	aaa	ccc	aag	cag	1174	
Asp	Ser	Leu	Lys	Gly	Arg	Arg	Gly	Arg	Leu	Pro	Ser	Lys	Pro	Lys	Gln		
340					345					350					355		
ccc	cca	gat	gcc	tcc	cct	gcc	aat	ctc	ctc	act	tcc	ctg	gtc	cgt	gca	1222	
Pro	Pro	Asp	Ala	Ser	Pro	Ala	Asn	Leu	Leu	Thr	Ser	Leu	Val	Arg	Ala		
				360					365					370			
cac	ctg	gac	tca	ggg	ccc	agc	act	gcc	aaa	ctg	gac	tac	tcc	aag	ttc	1270	
His	Leu	Asp	Ser	Gly	Pro	Ser	Thr	Ala	Lys	Leu	Asp	Tyr	Ser	Lys	Phe		
			375					380					385				
cag	gag	ctg	gtg	ctg	ccc	cac	ttt	ggg	aag	gaa	gat	gct	ggg	gat	gta	1318	
Gln	Glu	Leu	Val	Leu	Pro	His	Phe	Gly	Lys	Glu	Asp	Ala	Gly	Asp	Val		
		390					395					400					
cag	cag	ttc	tac	gac	ctg	ctc	tcc	ggc	tct	ctg	gag	gtc	atc	cgc	aag	1366	
Gln	Gln	Phe	Tyr	Asp	Leu	Leu	Ser	Gly	Ser	Leu	Glu	Val	Ile	Arg	Lys		
		405				410					415						
tgg	gcg	gag	aag	atc	cct	ggc	ttt	gct	gag	ctg	tca	ccg	gct	gac	cag	1414	
Trp	Ala	Glu	Lys	Ile	Pro	Gly	Phe	Ala	Glu	Leu	Ser	Pro	Ala	Asp	Gln		
420					425					430					435		
gac	ctg	ttg	ctg	gag	tcg	gcc	ttc	ctg	gag	ctc	ttc	atc	ctc	cgc	ctg	1462	
Asp	Leu	Leu	Leu	Glu	Ser	Ala	Phe	Leu	Glu	Leu	Phe	Ile	Leu	Arg	Leu		
				440					445					450			

gcg tac agg tct aag cca ggc gag ggc aag ctc atc ttc tgc tca ggc 1510  
Ala Tyr Arg Ser Lys Pro Gly Glu Gly Lys Leu Ile Phe Cys Ser Gly  
455 460 465

ctg gtg cta cac cgg ctg cag tgt gcc cgt ggc ttc ggg gac tgg att 1558  
Leu Val Leu His Arg Leu Gln Cys Ala Arg Gly Phe Gly Asp Trp Ile  
470 475 480

gac agt atc ctg gcc ttc tca agg tcc ctg cac agc ttg ctt gtc gat 1606  
Asp Ser Ile Leu Ala Phe Ser Arg Ser Leu His Ser Leu Leu Val Asp  
485 490 495

gtc cct gcc ttc gcc tgc ctc tct gcc ctt gtc ctc atc acc gac cgg 1654  
Val Pro Ala Phe Ala Cys Leu Ser Ala Leu Val Leu Ile Thr Asp Arg  
500 505 510 515

cat ggg ctg cag gag ccg cgg cgg gtg gag gag ctg cag aac cgc atc 1702  
His Gly Leu Gln Glu Pro Arg Arg Val Glu Glu Leu Gln Asn Arg Ile  
520 525 530

gcc agc tgc ctg aag gag cac gtg gca gct gtg gcg ggc gag ccc cag 1750  
Ala Ser Cys Leu Lys Glu His Val Ala Ala Val Ala Gly Glu Pro Gln  
535 540 545

cca gcc agc tgc ctg tca cgt ctg ttg ggc aaa ctg ccc gag ctg cgg 1798  
Pro Ala Ser Cys Leu Ser Arg Leu Leu Gly Lys Leu Pro Glu Leu Arg  
550 555 560

acc ctg tgc acc cag ggc ctg cag cgc atc ttc tac ctc aag ctg gag 1846  
Thr Leu Cys Thr Gln Gly Leu Gln Arg Ile Phe Tyr Leu Lys Leu Glu  
565 570 575

gac ttg gtg ccc cct cca ccc atc att gac aag atc ttc atg gac acg 1894  
Asp Leu Val Pro Pro Pro Ile Ile Asp Lys Ile Phe Met Asp Thr  
580 585 590 595

ctg ccc ttc tga cccctgcctg cctgggaaca cgtgtgcaca tgcgcactct 1946  
Leu Pro Phe \*

ctcatatgcc accccatgtg ccttttagtcc acggacccca gagcaccccc aagcctgggc 2006  
ttagctgcag aacagagggga cctgctcacc tgcccaaagg ggatgaaggg agggaggctc 2066  
aaggcccttg ggggaggggg atgccttcat gggggtgacc cacgatgtgt tcttatcccc 2126  
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<211> 598  
<212> PRT  
<213> Homo Sapiens

<400> 58  
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Pro Arg Asp His Leu Ala Ser Asp Pro Leu Thr Pro Glu Phe Ile Lys  
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Pro Thr Met Asp Leu Ala Ser Pro Glu Ala Ala Pro Ala Ala Pro Thr

		35					40					45			
Ala	Leu	Pro	Ser	Phe	Ser	Thr	Phe	Met	Asp	Gly	Tyr	Thr	Gly	Glu	Phe
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Asp	Thr	Phe	Leu	Tyr	Gln	Leu	Pro	Gly	Thr	Val	Gln	Pro	Cys	Ser	Ser
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Ala	Ser	Ser	Ser	Ala	Ser	Ser	Thr	Ser	Ser	Ser	Ser	Ala	Thr	Ser	Pro
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Ala	Ser	Ala	Ser	Phe	Lys	Phe	Glu	Asp	Phe	Gln	Val	Tyr	Gly	Cys	Tyr
			100				105						110		
Pro	Gly	Pro	Leu	Ser	Gly	Pro	Val	Asp	Glu	Ala	Leu	Ser	Ser	Ser	Gly
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Ser	Asp	Tyr	Tyr	Gly	Ser	Pro	Cys	Ser	Ala	Pro	Ser	Pro	Ser	Thr	Pro
	130					135				140					
Ser	Phe	Gln	Pro	Pro	Gln	Leu	Ser	Pro	Trp	Asp	Gly	Ser	Phe	Gly	His
145					150					155					160
Phe	Ser	Pro	Ser	Gln	Thr	Tyr	Glu	Gly	Leu	Arg	Ala	Trp	Thr	Glu	Gln
				165				170						175	
Leu	Pro	Lys	Ala	Ser	Gly	Pro	Pro	Gln	Pro	Pro	Ala	Phe	Phe	Ser	Phe
			180					185					190		
Ser	Pro	Pro	Thr	Gly	Pro	Ser	Pro	Ser	Leu	Ala	Gln	Ser	Pro	Leu	Lys
		195					200					205			
Leu	Phe	Pro	Ser	Gln	Ala	Thr	His	Gln	Leu	Gly	Glu	Gly	Glu	Ser	Tyr
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Ser	Met	Pro	Thr	Ala	Phe	Pro	Gly	Leu	Ala	Pro	Thr	Ser	Pro	His	Leu
225					230					235					240
Glu	Gly	Ser	Gly	Ile	Leu	Asp	Thr	Pro	Val	Thr	Ser	Thr	Lys	Ala	Arg
				245					250					255	
Ser	Gly	Ala	Pro	Gly	Gly	Ser	Glu	Gly	Arg	Cys	Ala	Val	Cys	Gly	Asp
			260					265					270		
Asn	Ala	Ser	Cys	Gln	His	Tyr	Gly	Val	Arg	Thr	Cys	Glu	Gly	Cys	Lys
		275					280					285			
Gly	Phe	Phe	Lys	Arg	Thr	Val	Gln	Lys	Asn	Ala	Lys	Tyr	Ile	Cys	Leu
	290					295					300				
Ala	Asn	Lys	Asp	Cys	Pro	Val	Asp	Lys	Arg	Arg	Arg	Asn	Arg	Cys	Gln
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Phe	Cys	Arg	Phe	Gln	Lys	Cys	Leu	Ala	Val	Gly	Met	Val	Lys	Glu	Val
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Val	Arg	Thr	Asp	Ser	Leu	Lys	Gly	Arg	Arg	Gly	Arg	Leu	Pro	Ser	Lys
			340					345					350		
Pro	Lys	Gln	Pro	Pro	Asp	Ala	Ser	Pro	Ala	Asn	Leu	Leu	Thr	Ser	Leu
		355					360					365			
Val	Arg	Ala	His	Leu	Asp	Ser	Gly	Pro	Ser	Thr	Ala	Lys	Leu	Asp	Tyr
	370					375					380				
Ser	Lys	Phe	Gln	Glu	Leu	Val	Leu	Pro	His	Phe	Gly	Lys	Glu	Asp	Ala
385					390					395</					

530		535		540
Glu Pro Gln Pro Ala Ser Cys Leu Ser Arg Leu Leu Gly Lys Leu Pro				
545		550		555
Glu Leu Arg Thr Leu Cys Thr Gln Gly Leu Gln Arg Ile Phe Tyr Leu				
	565		570	
Lys Leu Glu Asp Leu Val Pro Pro Pro Pro Ile Ile Asp Lys Ile Phe				
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Met Asp Thr Leu Pro Phe				
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<210> 59

<211> 1071

<212> DNA

<213> Homo Sapiens

<220>

<221> CDS

<222> (106)...(918)

<400> 59

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Met Ala Thr Gly

1

acg cgc tat gcc ggg aag gtg gtg gtc gtg acc ggg ggc ggg cgc ggc	165
Thr Arg Tyr Ala Gly Lys Val Val Val Val Thr Gly Gly Gly Arg Gly	
5 10 15 20	

atc gga gct ggg atc gtg cgc gcc ttc gtg aac agc ggg gcc cga gtg	213
Ile Gly Ala Gly Ile Val Arg Ala Phe Val Asn Ser Gly Ala Arg Val	
25 30 35	

gtt atc tgc gac aag gat gag tct ggg ggc cgg gcc ctg gag cag gag	261
Val Ile Cys Asp Lys Asp Glu Ser Gly Gly Arg Ala Leu Glu Gln Glu	
40 45 50	

ctc cct gga gct gtc ttt atc ctc tgt gat gtg act cag gaa gat gat	309
Leu Pro Gly Ala Val Phe Ile Leu Cys Asp Val Thr Gln Glu Asp Asp	
55 60 65	

gtg aag acc ctg gtt tct gag acc atc cgc cga ttt ggc cgc ctg gat	357
Val Lys Thr Leu Val Ser Glu Thr Ile Arg Arg Phe Gly Arg Leu Asp	
70 75 80	

tgt gtt gtc aac aac gct ggc cac cac cca ccc cca cag agg cct gag	405
Cys Val Val Asn Asn Ala Gly His His Pro Pro Pro Gln Arg Pro Glu	
85 90 95 100	

gag acc tct gcc cag gga ttc cgc cag ctg ctg gag ctg aac cta ctg	453
Glu Thr Ser Ala Gln Gly Phe Arg Gln Leu Leu Glu Leu Asn Leu Leu	
105 110 115	

ggg acg tac acc ttg acc aag ctc gcc ctc ccc tac ctg cgg aag agt	501
Gly Thr Tyr Thr Leu Thr Lys Leu Ala Leu Pro Tyr Leu Arg Lys Ser	
120 125 130	

caa ggg aat gtc atc aac atc tcc agc ctg gtg ggg gca atc ggc cag	549
Gln Gly Asn Val Ile Asn Ile Ser Ser Leu Val Gly Ala Ile Gly Gln	
135 140 145	

gcc cag gca gtt ccc tat gtg gcc acc aag ggg gca gta aca gcc atg 597  
 Ala Gln Ala Val Pro Tyr Val Ala Thr Lys Gly Ala Val Thr Ala Met  
 150 155 160

acc aaa gct ttg gcc ctg gat gaa agt cca tat ggt gtc cga gtc aac 645  
 Thr Lys Ala Leu Ala Leu Asp Glu Ser Pro Tyr Gly Val Arg Val Asn  
 165 170 175 180

tgt atc tcc cca gga aac atc tgg acc ccg ctg tgg gag gag ctg gca 693  
 Cys Ile Ser Pro Gly Asn Ile Trp Thr Pro Leu Trp Glu Glu Leu Ala  
 185 190 195

gcc tta atg cca gac cct agg gcc aca atc cga gag ggc atg ctg gcc 741  
 Ala Leu Met Pro Asp Pro Arg Ala Thr Ile Arg Glu Gly Met Leu Ala  
 200 205 210

cag cca ctg ggc cgc atg ggc cag ccc gct gag gtc ggg gct gcg gca 789  
 Gln Pro Leu Gly Arg Met Gly Gln Pro Ala Glu Val Gly Ala Ala Ala  
 215 220 225

gtg ttc ctg gcc tcc gaa gcc aac ttc tgc acg ggc att gaa ctg ctc 837  
 Val Phe Leu Ala Ser Glu Ala Asn Phe Cys Thr Gly Ile Glu Leu Leu  
 230 235 240

gtg acg ggg ggt gca gag ctg ggg tac ggg tgc aag gcc agt cgg agc 885  
 Val Thr Gly Gly Ala Glu Leu Gly Tyr Gly Cys Lys Ala Ser Arg Ser  
 245 250 255 260

acc ccc gtg gac gcc ccc gat atc cct tcc tga tttctctcat ttctacttgg 938  
 Thr Pro Val Asp Ala Pro Asp Ile Pro Ser \*  
 265 270

ggcccccttc ctaggactct cccaccccaa actccaacct gtatcagatg cagcccccaa 998  
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<210> 60  
 <211> 270  
 <212> PRT  
 <213> Homo Sapiens

<400> 60  
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 20 25 30  
 Gly Ala Arg Val Val Ile Cys Asp Lys Asp Glu Ser Gly Gly Arg Ala  
 35 40 45  
 Leu Glu Gln Glu Leu Pro Gly Ala Val Phe Ile Leu Cys Asp Val Thr  
 50 55 60  
 Gln Glu Asp Asp Val Lys Thr Leu Val Ser Glu Thr Ile Arg Arg Phe  
 65 70 75 80  
 Gly Arg Leu Asp Cys Val Val Asn Asn Ala Gly His His Pro Pro Pro  
 85 90 95  
 Gln Arg Pro Glu Thr Ser Ala Gln Gly Phe Arg Gln Leu Leu Glu  
 100 105 110  
 Leu Asn Leu Leu Gly Thr Tyr Thr Leu Thr Lys Leu Ala Leu Pro Tyr  
 115 120 125  
 Leu Arg Lys Ser Gln Gly Asn Val Ile Asn Ile Ser Ser Leu Val Gly  
 130 135 140  
 Ala Ile Gly Gln Ala Gln Ala Val Pro Tyr Val Ala Thr Lys Gly Ala  
 145 150 155 160



Val	Thr	Ala	Met	Thr	Lys	Ala	Leu	Ala	Leu	Asp	Glu	Ser	Pro	Tyr	Gly
				165						170				175	
Val	Arg	Val	Asn	Cys	Ile	Ser	Pro	Gly	Asn	Ile	Trp	Thr	Pro	Leu	Trp
			180					185					190		
Glu	Glu	Leu	Ala	Ala	Leu	Met	Pro	Asp	Pro	Arg	Ala	Thr	Ile	Arg	Glu
		195					200					205			
Gly	Met	Leu	Ala	Gln	Pro	Leu	Gly	Arg	Met	Gly	Gln	Pro	Ala	Glu	Val
	210					215					220				
Gly	Ala	Ala	Ala	Val	Phe	Leu	Ala	Ser	Glu	Ala	Asn	Phe	Cys	Thr	Gly
225					230					235					240
Ile	Glu	Leu	Leu	Val	Thr	Gly	Gly	Ala	Glu	Leu	Gly	Tyr	Gly	Cys	Lys
				245					250					255	
Ala	Ser	Arg	Ser	Thr	Pro	Val	Asp	Ala	Pro	Asp	Ile	Pro	Ser		
			260					265					270		

<210> 61

<211> 2156

<212> DNA

<213> Homo Sapiens

<220>

<221> CDS

<222> (39)...(1502)

<400> 61

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Met Ala Gly Thr Asn Thr  
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ctt ttg atg ctg gaa aac ttc ata gat gga aaa ttt tta cct tgt agc 104  
Leu Leu Met Leu Glu Asn Phe Ile Asp Gly Lys Phe Leu Pro Cys Ser  
10 15 20

tca tat ata gat tct tac gac cca tca aca ggg gaa gtg tat tgc aga 152  
Ser Tyr Ile Asp Ser Tyr Asp Pro Ser Thr Gly Glu Val Tyr Cys Arg  
25 30 35

gtg cca aat agt gga aaa gac gag atc gaa gcc gcg gtc aag gcc gcc 200  
Val Pro Asn Ser Gly Lys Asp Glu Ile Glu Ala Ala Val Lys Ala Ala  
40 45 50

aga gaa gcc ttt ccc agc tgg tca tcc cgc agc ccc cag gag cgc tca 248  
Arg Glu Ala Phe Pro Ser Trp Ser Ser Arg Ser Pro Gln Glu Arg Ser  
55 60 65 70

cgg gtc ctg aac cag gtg gcg gat ttg ctg gag cag tcc ctg gag gag 296  
Arg Val Leu Asn Gln Val Ala Asp Leu Leu Glu Gln Ser Leu Glu Glu  
75 80 85

ttt gcc cag gcc gag tct aaa gac caa ggg aaa acc tta gca ctg gca 344  
Phe Ala Gln Ala Glu Ser Lys Asp Gln Gly Lys Thr Leu Ala Leu Ala  
90 95 100

aga acc atg gac att ccc cgg tct gtg cag aac ttc agg ttc ttc gct 392  
Arg Thr Met Asp Ile Pro Arg Ser Val Gln Asn Phe Arg Phe Phe Ala  
105 110 115

tcc tcc agc ctg cac cac acg tca gag tgc acg cag atg gac cac ctg 440  
Ser Ser Ser Leu His His Thr Ser Glu Cys Thr Gln Met Asp His Leu  
120 125 130

ggc tgc atg cac tac acg gtg cgg gcc ccg gtg gga gtc gct ggt ctg	488
Gly Cys Met His Tyr Thr Val Arg Ala Pro Val Gly Val Ala Gly Leu	
135 140 145 150	
atc agc ccc tgg aat ttg cca ctc tac ttg ctg acc tgg aag ata gct	536
Ile Ser Pro Trp Asn Leu Pro Leu Tyr Leu Leu Thr Trp Lys Ile Ala	
155 160 165	
cca gcg atg gct gca ggg aac act gtg ata gcc aag ccc agt gag ctg	584
Pro Ala Met Ala Ala Gly Asn Thr Val Ile Ala Lys Pro Ser Glu Leu	
170 175 180	
act tca gtg act gcg tgg atg ttg tgc aaa ctc ctg gat aaa gca ggt	632
Thr Ser Val Thr Ala Trp Met Leu Cys Lys Leu Leu Asp Lys Ala Gly	
185 190 195	
gtt cca cca ggt gtg gtc aat att gtg ttt gga acc ggg ccc agg gtg	680
Val Pro Pro Gly Val Val Asn Ile Val Phe Gly Thr Gly Pro Arg Val	
200 205 210	
ggg gag gcc ctg gtg tcc cac cca gag gtg ccc ctg atc tcc ttc acc	728
Gly Glu Ala Leu Val Ser His Pro Glu Val Pro Leu Ile Ser Phe Thr	
215 220 225 230	
ggg agc cag ccc acc gct gag cgg atc acc cag ctg agc gct ccc cac	776
Gly Ser Gln Pro Thr Ala Glu Arg Ile Thr Gln Leu Ser Ala Pro His	
235 240 245	
tgc aaa aag ctc tcc ctg gag ctg ggg ggc aag aat cct gcc atc atc	824
Cys Lys Lys Leu Ser Leu Glu Leu Gly Gly Lys Asn Pro Ala Ile Ile	
250 255 260	
ttt gag gac gcc aac ctg gat gag tgc att ccg gca acc gtc agg tcc	872
Phe Glu Asp Ala Asn Leu Asp Glu Cys Ile Pro Ala Thr Val Arg Ser	
265 270 275	
agc ttt gcc aac cag ggt gaa atc tgt ctc tgt acc agc agg atc ttt	920
Ser Phe Ala Asn Gln Gly Glu Ile Cys Leu Cys Thr Ser Arg Ile Phe	
280 285 290	
gtc cag aag agc atc tat agt gaa ttt tta aag aga ttt gta gaa gct	968
Val Gln Lys Ser Ile Tyr Ser Glu Phe Leu Lys Arg Phe Val Glu Ala	
295 300 305 310	
acc aga aag tgg aaa gtc ggc att ccc tct gat cca ctg gtg agc ata	1016
Thr Arg Lys Trp Lys Val Gly Ile Pro Ser Asp Pro Leu Val Ser Ile	
315 320 325	
ggg gct ctg ata agt aaa gca cat ttg gag aaa gtc aga agt tac gtc	1064
Gly Ala Leu Ile Ser Lys Ala His Leu Glu Lys Val Arg Ser Tyr Val	
330 335 340	
aag aga gct ctt gct gaa ggt gcc caa att tgg tgc ggt gag gga gtg	1112
Lys Arg Ala Leu Ala Glu Gly Ala Gln Ile Trp Cys Gly Glu Gly Val	
345 350 355	
gat aag ttg agc ctc cct gcc agg aac cag gca ggc tac ttt atg ctt	1160
Asp Lys Leu Ser Leu Pro Ala Arg Asn Gln Ala Gly Tyr Phe Met Leu	
360 365 370	
ccc acg gtg ata aca gac att aag gat gaa tcc tgc tgc atg acg gaa	1208
Pro Thr Val Ile Thr Asp Ile Lys Asp Glu Ser Cys Cys Met Thr Glu	

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375                380                385                390
gag ata ttt ggt cca gtg acg tgt gtc gtc ccc ttt gat agt gaa gag 1256
Glu Ile Phe Gly Pro Val Thr Cys Val Val Pro Phe Asp Ser Glu Glu
                395                400                405

gag gtg att gaa aga gcc aac aac gtt aag tat ggg ctg ggg gct acc 1304
Glu Val Ile Glu Arg Ala Asn Asn Val Lys Tyr Gly Leu Gly Ala Thr
                410                415                420

gtg tgg tcc agc aat gtg ggg cgc gtc cac cgg gtg gct aag aag ctg 1352
Val Trp Ser Ser Asn Val Gly Arg Val His Arg Val Ala Lys Lys Leu
                425                430                435

cag tct ggc ttg gtc tgg acc aac tgc tgg ctc atc agg gag ctg aac 1400
Gln Ser Gly Leu Val Trp Thr Asn Cys Trp Leu Ile Arg Glu Leu Asn
                440                445                450

ctt cct ttc ggg ggg atg aag agt tct gga ata ggt aga gag gga gcc 1448
Leu Pro Phe Gly Gly Met Lys Ser Ser Gly Ile Gly Arg Glu Gly Ala
455                460                465                470

aag gac tct tac gac ttc ttc act gag atc aaa acc atc acc gtt aaa 1496
Lys Asp Ser Tyr Asp Phe Phe Thr Glu Ile Lys Thr Ile Thr Val Lys
                475                480                485

cac tga tctttgctaa tgggtggagcc actatggcca atgcctggct gcaggcatca 1552
His *

gttggttcaat gtggtagatg aaaatcatgg catgaattcc agctatgcct tgacttggca 1612
gaaggttatc tctagcttat cctcagttct tagtaacttt acccactagt gaagagatac 1672
tgtctatttt caatgtggac tcggaaaaaa agacttataa gtaggaagat agaacaatga 1732
tgccagttgt caggctcctc ccaggttatg ttttcatagt gtttctttca tcatcttcat 1792
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<210> 62
<211> 487
<212> PRT
<213> Homo Sapiens

<400> 62
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Gly Glu Val Tyr Cys Arg Val Pro Asn Ser Gly Lys Asp Glu Ile Glu
                35                40                45
Ala Ala Val Lys Ala Ala Arg Glu Ala Phe Pro Ser Trp Ser Ser Arg
 50                55                60
Ser Pro Gln Glu Arg Ser Arg Val Leu Asn Gln Val Ala Asp Leu Leu
65                70                75                80
Glu Gln Ser Leu Glu Glu Phe Ala Gln Ala Glu Ser Lys Asp Gln Gly
                85                90                95
Lys Thr Leu Ala Leu Ala Arg Thr Met Asp Ile Pro Arg Ser Val Gln
100                105                110

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Asn	Phe	Arg	Phe	Phe	Ala	Ser	Ser	Ser	Leu	His	His	Thr	Ser	Glu	Cys	
		115					120					125				
Thr	Gln	Met	Asp	His	Leu	Gly	Cys	Met	His	Tyr	Thr	Val	Arg	Ala	Pro	
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Val	Gly	Val	Ala	Gly	Leu	Ile	Ser	Pro	Trp	Asn	Leu	Pro	Leu	Tyr	Leu	
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Gln	Leu	Ser	Ala	Pro	His	Cys	Lys	Lys	Leu	Ser	Leu	Glu	Leu	Gly	Gly	
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Lys	Asn	Pro	Ala	Ile	Ile	Phe	Glu	Asp	Ala	Asn	Leu	Asp	Glu	Cys	Ile	
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Pro	Ala	Thr	Val	Arg	Ser	Ser	Phe	Ala	Asn	Gln	Gly	Glu	Ile	Cys	Leu	
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Cys	Thr	Ser	Arg	Ile	Phe	Val	Gln	Lys	Ser	Ile	Tyr	Ser	Glu	Phe	Leu	
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Pro	Phe	Asp	Ser	Glu	Glu	Val	Ile	Glu	Arg	Ala	Asn	Asn	Val	Lys		
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Tyr	Gly	Leu	Gly	Ala	Thr	Val	Trp	Ser	Ser	Asn	Val	Gly	Arg	Val	His	
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Arg	Val	Ala	Lys	Lys	Leu	Gln	Ser	Gly	Leu	Val	Trp	Thr	Asn	Cys	Trp	
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Leu	Ile	Arg	Glu	Leu	Asn	Leu	Pro	Phe	Gly	Gly	Met	Lys	Ser	Ser	Gly	
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Ile	Gly	Arg	Glu	Gly	Ala	Lys	Asp	Ser	Tyr	Asp	Phe	Phe	Thr	Glu	Ile	
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<213> Homo Sapiens

<220>

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tctgggcctg ggtttcctga agtcaccaca catagaggag agagaaa atg gct gag	176
Met Ala Glu	
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tta aag tac att tct gga ttt ggg aat gag tgt tct tca gag gat cct	224
Leu Lys Tyr Ile Ser Gly Phe Gly Asn Glu Cys Ser Ser Glu Asp Pro	
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cgc tgc cca ggt tcc ctg cca gaa gga cag aat aat cct cag gtc tgc	272
Arg Cys Pro Gly Ser Leu Pro Glu Gly Gln Asn Asn Pro Gln Val Cys	
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Pro Tyr Asn Leu Tyr Ala Glu Gln Leu Ser Gly Ser Ala Phe Thr Cys	
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cca cgg agc acc aat aag aga agc tgg ctg tat agg att cta cct tca	368
Pro Arg Ser Thr Asn Lys Arg Ser Trp Leu Tyr Arg Ile Leu Pro Ser	
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gtt tct cac aag ccc ttt gaa tcc att gac gaa ggc cat gtc act cac	416
Val Ser His Lys Pro Phe Glu Ser Ile Asp Glu Gly His Val Thr His	
70 75 80	
aac tgg gat gaa gtt gat cct gat cct aac cag ctt aga tgg aaa cca	464
Asn Trp Asp Glu Val Asp Pro Asp Pro Asn Gln Leu Arg Trp Lys Pro	
85 90 95	
ttt gag att cca aaa gca tct cag aag aaa gta gac ttt gtg agt ggc	512
Phe Glu Ile Pro Lys Ala Ser Gln Lys Lys Val Asp Phe Val Ser Gly	
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ctg cat acc ttg tgt gga gct gga gac ata aag tct aac aat ggg ctt	560
Leu His Thr Leu Cys Gly Ala Gly Asp Ile Lys Ser Asn Asn Gly Leu	
120 125 130	
gct atc cac att ttc ctc tgc aat acc tcc atg gag aac aga tgc ttt	608
Ala Ile His Ile Phe Leu Cys Asn Thr Ser Met Glu Asn Arg Cys Phe	
135 140 145	
tac aat tca gat ggg gac ttc ttg att gtt ccg cag aaa ggg aac ctt	656
Tyr Asn Ser Asp Gly Asp Phe Leu Ile Val Pro Gln Lys Gly Asn Leu	
150 155 160	
ctc att tac acc gag ttt ggc aag atg ctt gta cag ccc aat gag atc	704
Leu Ile Tyr Thr Glu Phe Gly Lys Met Leu Val Gln Pro Asn Glu Ile	
165 170 175	
tgc gtc att cag aga gga atg cgg ttc agc ata gat gtc ttt gag gag	752
Cys Val Ile Gln Arg Gly Met Arg Phe Ser Ile Asp Val Phe Glu Glu	
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acc agg ggc tac atc ttg gag gtc tat ggt gtc cac ttt gag tta cct	800
Thr Arg Gly Tyr Ile Leu Glu Val Tyr Gly Val His Phe Glu Leu Pro	
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gac ctt gga cca att ggg gcc aat ggc ttg gcc aat cct cgt gat ttc	848
Asp Leu Gly Pro Ile Gly Ala Asn Gly Leu Ala Asn Pro Arg Asp Phe	
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ttg ata ccc att gcc tgg tat gag gat cgc caa gta cca ggt ggt tac	896
Leu Ile Pro Ile Ala Trp Tyr Glu Asp Arg Gln Val Pro Gly Gly Tyr	

230	235	240	
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Thr Val Ile Asn Lys Tyr Gln Gly Lys Leu Phe Ala Ala Lys Gln Asp			
245	250	255	
gtc tcc ccg ttc aat gtt gtg gcc tgg cac ggg aat tat aca ccc tac			992
Val Ser Pro Phe Asn Val Val Ala Trp His Gly Asn Tyr Thr Pro Tyr			
260	265	270	275
aag tac aac ctg aag aat ttc atg gtt atc aac tca gtg gcc ttt gac			1040
Lys Tyr Asn Leu Lys Asn Phe Met Val Ile Asn Ser Val Ala Phe Asp			
280	285	290	
cat gca gac cca tcc att ttc aca gta ttg act gct aag tct gtc cgc			1088
His Ala Asp Pro Ser Ile Phe Thr Val Leu Thr Ala Lys Ser Val Arg			
295	300	305	
cct gga gtg gcc att gct gat ttt gtc atc ttc cca cct cga tgg ggg			1136
Pro Gly Val Ala Ile Ala Asp Phe Val Ile Phe Pro Pro Arg Trp Gly			
310	315	320	
gtt gct gat aag acc ttc agg cct cct tat tac cat agg aac tgc atg			1184
Val Ala Asp Lys Thr Phe Arg Pro Pro Tyr Tyr His Arg Asn Cys Met			
325	330	335	
agt gag ttc atg gga ctc atc cga ggt cac tat gag gca aag caa ggt			1232
Ser Glu Phe Met Gly Leu Ile Arg Gly His Tyr Glu Ala Lys Gln Gly			
340	345	350	355
ggg ttc ctg cca ggg gga ggg agt cta cac agc aca atg acc ccc cat			1280
Gly Phe Leu Pro Gly Gly Gly Ser Leu His Ser Thr Met Thr Pro His			
360	365	370	
gga cct gat gct gac tgc ttt gag aag gcc agc aag gtc aag ctg gca			1328
Gly Pro Asp Ala Asp Cys Phe Glu Lys Ala Ser Lys Val Lys Leu Ala			
375	380	385	
cct gag agg att gcc gat ggc acc atg gca ttt atg ttt gaa tca tct			1376
Pro Glu Arg Ile Ala Asp Gly Thr Met Ala Phe Met Phe Glu Ser Ser			
390	395	400	
tta agt ctg gcg gtc aca aag tgg gga ctc aag gcc tcc agg tgt ttg			1424
Leu Ser Leu Ala Val Thr Lys Trp Gly Leu Lys Ala Ser Arg Cys Leu			
405	410	415	
gat gag aac tac cac aag tgc tgg gag cca ctc aag agc cac ttc act			1472
Asp Glu Asn Tyr His Lys Cys Trp Glu Pro Leu Lys Ser His Phe Thr			
420	425	430	435
ccc aac tcc agg aac cca gca gaa cct aat tga gactggaaca ttgctaccat			1525
Pro Asn Ser Arg Asn Pro Ala Glu Pro Asn *			
440	445		
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gagggggttg gttaaaatga aaattcactt ttcatagtca agtaactcag aacttttatg			1645
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tctgtgg			1712

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<213> Homo Sapiens

<400> 64

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			20					25					30			
Gln	Val	Cys	Pro	Tyr	Asn	Leu	Tyr	Ala	Glu	Gln	Leu	Ser	Gly	Ser	Ala	
		35					40					45				
Phe	Thr	Cys	Pro	Arg	Ser	Thr	Asn	Lys	Arg	Ser	Trp	Leu	Tyr	Arg	Ile	
	50					55					60					
Leu	Pro	Ser	Val	Ser	His	Lys	Pro	Phe	Glu	Ser	Ile	Asp	Glu	Gly	His	
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Val	Thr	His	Asn	Trp	Asp	Glu	Val	Asp	Pro	Asp	Pro	Asn	Gln	Leu	Arg	
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Trp	Lys	Pro	Phe	Glu	Ile	Pro	Lys	Ala	Ser	Gln	Lys	Lys	Val	Asp	Phe	
			100					105					110			
Val	Ser	Gly	Leu	His	Thr	Leu	Cys	Gly	Ala	Gly	Asp	Ile	Lys	Ser	Asn	
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Asn	Gly	Leu	Ala	Ile	His	Ile	Phe	Leu	Cys	Asn	Thr	Ser	Met	Glu	Asn	
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Arg	Cys	Phe	Tyr	Asn	Ser	Asp	Gly	Asp	Phe	Leu	Ile	Val	Pro	Gln	Lys	
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Gly	Asn	Leu	Leu	Ile	Tyr	Thr	Glu	Phe	Gly	Lys	Met	Leu	Val	Gln	Pro	
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Asn	Glu	Ile	Cys	Val	Ile	Gln	Arg	Gly	Met	Arg	Phe	Ser	Ile	Asp	Val	
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Phe	Glu	Glu	Thr	Arg	Gly	Tyr	Ile	Leu	Glu	Val	Tyr	Gly	Val	His	Phe	
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Glu	Leu	Pro	Asp	Leu	Gly	Pro	Ile	Gly	Ala	Asn	Gly	Leu	Ala	Asn	Pro	
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Arg	Asp	Phe	Leu	Ile	Pro	Ile	Ala	Trp	Tyr	Glu	Asp	Arg	Gln	Val	Pro	
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Gly	Gly	Tyr	Thr	Val	Ile	Asn	Lys	Tyr	Gln	Gly	Lys	Leu	Phe	Ala	Ala	
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Thr	Pro	Tyr	Lys	Tyr	Asn	Leu	Lys	Asn	Phe	Met	Val	Ile	Asn	Ser	Val	
	275					280						285				
Ala	Phe	Asp	His	Ala	Asp	Pro	Ser	Ile	Phe	Thr	Val	Leu	Thr	Ala	Lys	
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Ser	Val	Arg	Pro	Gly	Val	Ala	Ile	Ala	Asp	Phe	Val	Ile	Phe	Pro	Pro	
305					310					315					320	
Arg	Trp	Gly	Val	Ala	Asp	Lys	Thr	Phe	Arg	Pro	Pro	Tyr	Tyr	His	Arg	
			325						330					335		
Asn	Cys	Met	Ser	Glu	Phe	Met	Gly	Leu	Ile	Arg	Gly	His	Tyr	Glu	Ala	
		340						345					350			
Lys	Gln	Gly	Gly	Phe	Leu	Pro	Gly	Gly	Gly	Ser	Leu	His	Ser	Thr	Met	
		355					360					365				
Thr	Pro	His	Gly	Pro	Asp	Ala	Asp	Cys	Phe	Glu	Lys	Ala	Ser	Lys	Val	
	370					375					380					
Lys	Leu	Ala	Pro	Glu	Arg	Ile	Ala	Asp	Gly	Thr	Met	Ala	Phe	Met	Phe	
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Glu	Ser	Ser	Leu	Ser	Leu	Ala	Val	Thr	Lys	Trp	Gly	Leu	Lys	Ala	Ser	
			405						410					415		
Arg	Cys	Leu	Asp	Glu	Asn	Tyr	His	Lys	Cys	Trp	Glu	Pro	Leu	Lys	Ser	
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His	Phe	Thr	Pro	Asn	Ser	Arg	Asn	Pro	Ala	Glu	Pro	Asn				
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<210> 65





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His Phe Asp	Pro Thr Ile	Ser Leu Lys	Thr Val Lys	Leu Met Lys	Glu	
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ggc ttg gag	gct gcc caa	ctg aaa gct	cac ctg atg	agc cag ccc	ttg	773
Gly Leu Glu	Ala Ala Gln	Leu Lys Ala	His Leu Met	Ser Gln Pro	Leu	
	235		240		245	
gct tac cac	act cct gac	tgc aac aag	cag gga ttc	atc gat ctc	cca	821
Ala Tyr His	Thr Pro Asp	Cys Asn Lys	Gln Gly Phe	Ile Asp Leu	Pro	
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gaa ttc cca	ttt gga ctg	gaa ccc aga	gtt gcc acc	aga tgg gat	att	869
Glu Phe Pro	Phe Gly Leu	Glu Pro Arg	Val Ala Thr	Arg Trp Asp	Ile	
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caa aaa tac	gcc aga gag	gcc tac aac	ctg ggg gtc	agg tac att	ggc	917
Gln Lys Tyr	Ala Arg Glu	Ala Tyr Asn	Leu Gly Val	Arg Tyr Ile	Gly	
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ggg tgc tgt	gga ttt gag	ccc tac cac	atc agg gca	att gca gag	gag	965
Gly Cys Cys	Gly Phe Glu	Pro Tyr His	Ile Arg Ala	Ile Ala Glu	Glu	
	300		305		310	
ctg gcc cca	gaa agg ggc	ttt ttg cca	cca gct tca	gaa aaa cat	ggc	1013
Leu Ala Pro	Glu Arg Gly	Phe Leu Pro	Pro Ala Ser	Glu Lys His	Gly	
	315		320		325	
agc tgg gga	agt ggt ttg	gac atg cac	acc aaa ccc	tgg gtt aga	gca	1061
Ser Trp Gly	Ser Gly Leu	Asp Met His	Thr Lys Pro	Trp Val Arg	Ala	
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agg gcc agg	aag gaa tac	tgg gag aat	ctt cgg ata	gcc tca ggc	cgg	1109
Arg Ala Arg	Lys Glu Tyr	Trp Glu Asn	Leu Arg Ile	Ala Ser Gly	Arg	
	350		355		360	
cca tac aac	cct tca atg	tca aag cca	gat ggc tgg	gga gtg acc	aaa	1157
Pro Tyr Asn	Pro Ser Met	Ser Lys Pro	Asp Gly Trp	Gly Val Thr	Lys	
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gga aca gcc	gag ctg atg	cag cag aaa	gaa gcc aca	act gag cag	cag	1205
Gly Thr Ala	Glu Leu Met	Gln Gln Lys	Glu Ala Thr	Thr Thr Glu	Gln	
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ctg aaa gag	ctc ttt gaa	aaa caa aaa	ttc aaa tca	cag tag		1247
Leu Lys Glu	Leu Phe Glu	Lys Gln Lys	Phe Lys Ser	Gln *		
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tcgaaattaa	atgtgtgatc	cactctagta	ttttctgttc	cattcctttt	cattctatctt	1787
catttataaa	acatgctagt	tgagactttt	caaattggatt	tttatgacct	actactgggt	1847
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ccaatgggga ggaggggagg agagatggat atttcagccc tctccatcct agtcaacact 2087
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<211> 406

<212> PRT

<213> Homo Sapiens

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Leu Glu Lys Arg Gly Tyr Val Lys Ala Gly Pro Trp Thr Pro Glu Ala
 35          40          45
Ala Val Glu His Pro Glu Ala Val Arg Gln Leu His Arg Glu Phe Leu
 50          55          60
Arg Ala Gly Ser Asn Val Met Gln Thr Phe Thr Phe Tyr Ala Ser Glu
 65          70          75          80
Asp Lys Leu Glu Asn Arg Gly Asn Tyr Val Leu Glu Lys Ile Ser Gly
 85          90          95
Gln Glu Val Asn Glu Ala Ala Cys Asp Ile Ala Arg Gln Val Ala Asp
100          105          110
Glu Gly Asp Ala Leu Val Ala Gly Gly Val Ser Gln Thr Pro Ser Tyr
115          120          125
Leu Ser Cys Lys Ser Glu Thr Glu Val Lys Lys Val Phe Leu Gln Gln
130          135          140
Leu Glu Val Phe Met Lys Lys Asn Val Asp Phe Leu Ile Ala Glu Tyr
145          150          155          160
Phe Glu His Val Glu Ala Val Trp Ala Val Glu Thr Leu Ile Ala
165          170          175
Ser Gly Lys Pro Val Ala Ala Thr Met Cys Ile Gly Pro Glu Gly Asp
180          185          190
Leu His Gly Val Pro Pro Gly Glu Cys Ala Val Arg Leu Val Lys Ala
195          200          205
Gly Ala Ser Ile Ile Gly Val Asn Cys His Phe Asp Pro Thr Ile Ser
210          215          220
Leu Lys Thr Val Lys Leu Met Lys Glu Gly Leu Glu Ala Ala Gln Leu
225          230          235          240
Lys Ala His Leu Met Ser Gln Pro Leu Ala Tyr His Thr Pro Asp Cys
245          250          255
Asn Lys Gln Gly Phe Ile Asp Leu Pro Glu Phe Pro Phe Gly Leu Glu
260          265          270
Pro Arg Val Ala Thr Arg Trp Asp Ile Gln Lys Tyr Ala Arg Glu Ala
275          280          285
Tyr Asn Leu Gly Val Arg Tyr Ile Gly Gly Cys Cys Gly Phe Glu Pro
290          295          300
Tyr His Ile Arg Ala Ile Ala Glu Glu Leu Ala Pro Glu Arg Gly Phe
305          310          315          320
Leu Pro Pro Ala Ser Glu Lys His Gly Ser Trp Gly Ser Gly Leu Asp
325          330          335
Met His Thr Lys Pro Trp Val Arg Ala Arg Ala Arg Lys Glu Tyr Trp
340          345          350
Glu Asn Leu Arg Ile Ala Ser Gly Arg Pro Tyr Asn Pro Ser Met Ser
355          360          365

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Lys Pro Asp Gly Trp Gly Val Thr Lys Gly Thr Ala Glu Leu Met Gln  
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 Gln Lys Glu Ala Thr Thr Glu Gln Gln Leu Lys Glu Leu Phe Glu Lys  
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 Gln Lys Phe Lys Ser Gln  
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 <212> DNA  
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 <222> (133)...(1878)

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 cccggagcca gg atg ccc gcg ccg cgc gcc cgg gag cag ccc cgc gtg ccc 171  
 Met Pro Ala Pro Arg Ala Arg Glu Gln Pro Arg Val Pro  
 1 5 10

ggg gag cgc cag ccg ctg ctg cct cgc ggt gcg cgg ggc cct cga cgg 219  
 Gly Glu Arg Gln Pro Leu Leu Pro Arg Gly Ala Arg Gly Pro Arg Arg  
 15 20 25

tgg cgg cgg gcg gcg ggc gcg gcc gtg ctg ctg gtg gag atg ctg gag 267  
 Trp Arg Arg Ala Ala Gly Ala Ala Val Leu Leu Val Glu Met Leu Glu  
 30 35 40 45

cgc gcc gcc ttc ttc ggc gtc acc gcc aac ctc gtg ctg tac ctc aac 315  
 Arg Ala Ala Phe Phe Gly Val Thr Ala Asn Leu Val Leu Tyr Leu Asn  
 50 55 60

agc acc aac ttc aac tgg acc ggc gag cag gcg acg cgc gcc gcg ctg 363  
 Ser Thr Asn Phe Asn Trp Thr Gly Glu Gln Ala Thr Arg Ala Ala Leu  
 65 70 75

gta ttc ctg ggc gcc tcc tac ctg ctg gcg ccc gtg ggc ggc tgg ctg 411  
 Val Phe Leu Gly Ala Ser Tyr Leu Leu Ala Pro Val Gly Gly Trp Leu  
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gcc gac gtg tac ctg ggc cgc tac cgc gcg gtc gcg ctc agc ctg ctg 459  
 Ala Asp Val Tyr Leu Gly Arg Tyr Arg Ala Val Ala Leu Ser Leu Leu  
 95 100 105

ctc tac ctg gcc gcc tcg ggc ctg ctg ccc gcc acc gcc ttc ccc gac 507  
 Leu Tyr Leu Ala Ala Ser Gly Leu Leu Pro Ala Thr Ala Phe Pro Asp  
 110 115 120 125

ggc cgc agc tcc ttc tgc gga gag atg ccc gcg tcg ccg ctg gga cct 555  
 Gly Arg Ser Ser Phe Cys Gly Glu Met Pro Ala Ser Pro Leu Gly Pro  
 130 135 140

gcc tgc ccc tcg gcc ggc tgc ccg cgc tcc tcg ccc agc ccc tac tgc 603  
 Ala Cys Pro Ser Ala Gly Cys Pro Arg Ser Ser Pro Ser Pro Tyr Cys  
 145 150 155

gcg ccc gtc ctc tac gcg ggc ctg ctg cta ctc ggc ctg gcc gcc agc 651  
 Ala Pro Val Leu Tyr Ala Gly Leu Leu Leu Leu Gly Leu Ala Ala Ser

160					165					170						
tcc	gtc	cgg	agc	aac	ctc	acc	tcc	ttc	ggc	gcc	gac	cag	gtg	atg	gat	699
Ser	Val	Arg	Ser	Asn	Leu	Thr	Ser	Phe	Gly	Ala	Asp	Gln	Val	Met	Asp	
	175					180					185					
ctc	ggc	cgc	gac	gcc	acc	cgc	cgc	ttc	ttc	aac	tgg	ttt	tac	tgg	agc	747
Leu	Gly	Arg	Asp	Ala	Thr	Arg	Arg	Phe	Phe	Asn	Trp	Phe	Tyr	Trp	Ser	
190					195					200					205	
atc	aac	ctg	ggc	gct	gtg	ctg	tgc	ctg	ctg	gtg	gtg	gcg	ttt	att	cag	795
Ile	Asn	Leu	Gly	Ala	Val	Leu	Ser	Leu	Leu	Val	Val	Ala	Phe	Ile	Gln	
				210				215						220		
cag	aac	atc	agc	ttc	ctg	ctg	ggc	tac	agc	atc	cct	gtg	ggc	tgt	gtg	843
Gln	Asn	Ile	Ser	Phe	Leu	Leu	Gly	Tyr	Ser	Ile	Pro	Val	Gly	Cys	Val	
			225					230					235			
ggc	ctg	gca	ttt	ttc	atc	ttc	ctc	ttt	gcc	acc	ccc	gtc	ttc	atc	acc	891
Gly	Leu	Ala	Phe	Phe	Ile	Phe	Leu	Phe	Ala	Thr	Pro	Val	Phe	Ile	Thr	
	240						245					250				
aag	ccc	ccg	atg	ggc	agc	caa	gtg	tcc	tct	atg	ctt	aag	ctc	gct	ctc	939
Lys	Pro	Pro	Met	Gly	Ser	Gln	Val	Ser	Ser	Met	Leu	Lys	Leu	Ala	Leu	
	255					260					265					
caa	aac	tgc	tgc	ccc	cag	ctg	tgg	caa	cga	cac	tgc	gcc	aga	gac	cgt	987
Gln	Asn	Cys	Cys	Pro	Gln	Leu	Trp	Gln	Arg	His	Ser	Ala	Arg	Asp	Arg	
270					275					280					285	
caa	tgt	gcc	cgc	gtg	ctg	gcc	gac	gag	agg	tct	ccc	cag	cca	ggg	gct	1035
Gln	Cys	Ala	Arg	Val	Leu	Ala	Asp	Glu	Arg	Ser	Pro	Gln	Pro	Gly	Ala	
				290					295					300		
tcc	ccg	caa	gag	gac	atc	gcc	aac	ttc	cag	gtg	ctg	gtg	aag	atc	ttg	1083
Ser	Pro	Gln	Glu	Asp	Ile	Ala	Asn	Phe	Gln	Val	Leu	Val	Lys	Ile	Leu	
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ccc	gtc	atg	gtg	acc	ctg	gtg	ccc	tac	tgg	atg	gtc	tac	ttc	cag	atg	1131
Pro	Val	Met	Val	Thr	Leu	Val	Pro	Tyr	Trp	Met	Val	Tyr	Phe	Gln	Met	
		320					325					330				
cag	tcc	acc	tat	gtc	ctg	cag	ggc	ctt	cac	ctc	cac	atc	cca	aac	att	1179
Gln	Ser	Thr	Tyr	Val	Leu	Gln	Gly	Leu	His	Leu	His	Ile	Pro	Asn	Ile	
	335				340						345					
ttc	cca	gcc	aac	ccg	gcc	aac	atc	tct	gtg	gcc	ctg	aga	gcc	cag	ggc	1227
Phe	Pro	Ala	Asn	Pro	Ala	Asn	Ile	Ser	Val	Ala	Leu	Arg	Ala	Gln	Gly	
350					355					360				365		
agc	agc	tac	acg	atc	ccg	gaa	gcc	tgg	ctc	ctc	ctg	gcc	aat	gtt	gtg	1275
Ser	Ser	Tyr	Thr	Ile	Pro	Glu	Ala	Trp	Leu	Leu	Leu	Ala	Asn	Val	Val	
				370					375					380		
gtg	gtg	ctg	att	ctg	gtc	cct	ctg	aag	gac	cgc	ttg	atc	gac	cct	tta	1323
Val	Val	Leu	Ile	Leu	Val	Pro	Leu	Lys	Asp	Arg	Leu	Ile	Asp	Pro	Leu	
			385					390					395			
ctg	ctg	cgg	tgc	aag	ctg	ctt	ccc	tct	gct	ctg	cag	aag	atg	gcg	ctg	1371
Leu	Leu	Arg	Cys	Lys	Leu	Leu	Pro	Ser	Ala	Leu	Gln	Lys	Met	Ala	Leu	
		400					405					410				

ggg atg ttc ttt ggt ttt acc tcc gtc att gtg gca gga gtc ctg gag	1419
Gly Met Phe Phe Gly Phe Thr Ser Val Ile Val Ala Gly Val Leu Glu	
415 420 425	
atg gag cgc tta cac tac atc cac cac aac gag acc gtg tcc cag cag	1467
Met Glu Arg Leu His Tyr Ile His His Asn Glu Thr Val Ser Gln Gln	
430 435 440 445	
att ggg gag gtc ctg tac aac gcg gca cca ctg tcc atc tgg tgg cag	1515
Ile Gly Glu Val Leu Tyr Asn Ala Ala Pro Leu Ser Ile Trp Trp Gln	
450 455 460	
atc cct cag tac ctg ctc att ggg atc agt gag atc ttt gcc agc atc	1563
Ile Pro Gln Tyr Leu Leu Ile Gly Ile Ser Glu Ile Phe Ala Ser Ile	
465 470 475	
cca ggc ctg gag ttt gcc tac tca gag gcc ccg cgc tcc atg cag ggc	1611
Pro Gly Leu Glu Phe Ala Tyr Ser Glu Ala Pro Arg Ser Met Gln Gly	
480 485 490	
gcc atc atg ggc atc ttc ttc tgc ctg tcg ggg gtg ggc tca ctg ttg	1659
Ala Ile Met Gly Ile Phe Phe Cys Leu Ser Gly Val Gly Ser Leu Leu	
495 500 505	
ggc tcc agc cta gtg gca ctg ctg tcc ttg ccc ggg ggc tgg ctg cac	1707
Gly Ser Ser Leu Val Ala Leu Leu Ser Leu Pro Gly Gly Trp Leu His	
510 515 520 525	
tgc ccc aag gac ttt ggg aac atc aac aat tgc cgg atg gac ctc tac	1755
Cys Pro Lys Asp Phe Gly Asn Ile Asn Asn Cys Arg Met Asp Leu Tyr	
530 535 540	
ttc ttc ctg ctg gct ggc att cag gcc gtc acg gct ctc cta ttt gtc	1803
Phe Phe Leu Leu Ala Gly Ile Gln Ala Val Thr Ala Leu Leu Phe Val	
545 550 555	
tgg atc gct gga cgc tat gag agg gcg tcc cag ggc cca gcc tcc cac	1851
Trp Ile Ala Gly Arg Tyr Glu Arg Ala Ser Gln Gly Pro Ala Ser His	
560 565 570	
agc cgt ttc agc agg gac agg ggc tga acaggcccta ttccagcccc	1898
Ser Arg Phe Ser Arg Asp Arg Gly *	
575 580	
cttgcttcac tctaccggac agacggcagc agtcccagct ctgggtttcct tctcgggttta	1958
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<210> 68

<211> 581

<212> PRT

<213> Homo Sapiens

<400> 68

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35 40 45	
Phe Phe Gly Val Thr Ala Asn Leu Val Leu Tyr Leu Asn Ser Thr Asn	
50 55 60	

Phe	Asn	Trp	Thr	Gly	Glu	Gln	Ala	Thr	Arg	Ala	Ala	Leu	Val	Phe	Leu
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Gly	Ala	Ser	Tyr	Leu	Leu	Ala	Pro	Val	Gly	Gly	Trp	Leu	Ala	Asp	Val
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Tyr	Leu	Gly	Arg	Tyr	Arg	Ala	Val	Ala	Leu	Ser	Leu	Leu	Leu	Tyr	Leu
			100					105					110		
Ala	Ala	Ser	Gly	Leu	Leu	Pro	Ala	Thr	Ala	Phe	Pro	Asp	Gly	Arg	Ser
		115					120					125			
Ser	Phe	Cys	Gly	Glu	Met	Pro	Ala	Ser	Pro	Leu	Gly	Pro	Ala	Cys	Pro
	130					135					140				
Ser	Ala	Gly	Cys	Pro	Arg	Ser	Ser	Pro	Ser	Pro	Tyr	Cys	Ala	Pro	Val
145					150					155					160
Leu	Tyr	Ala	Gly	Leu	Leu	Leu	Leu	Gly	Leu	Ala	Ala	Ser	Ser	Val	Arg
			165					170						175	
Ser	Asn	Leu	Thr	Ser	Phe	Gly	Ala	Asp	Gln	Val	Met	Asp	Leu	Gly	Arg
			180					185					190		
Asp	Ala	Thr	Arg	Arg	Phe	Phe	Asn	Trp	Phe	Tyr	Trp	Ser	Ile	Asn	Leu
	195						200					205			
Gly	Ala	Val	Leu	Ser	Leu	Leu	Val	Val	Ala	Phe	Ile	Gln	Gln	Asn	Ile
	210					215					220				
Ser	Phe	Leu	Leu	Gly	Tyr	Ser	Ile	Pro	Val	Gly	Cys	Val	Gly	Leu	Ala
225					230					235					240
Phe	Phe	Ile	Phe	Leu	Phe	Ala	Thr	Pro	Val	Phe	Ile	Thr	Lys	Pro	Pro
			245						250					255	
Met	Gly	Ser	Gln	Val	Ser	Ser	Met	Leu	Lys	Leu	Ala	Leu	Gln	Asn	Cys
			260					265					270		
Cys	Pro	Gln	Leu	Trp	Gln	Arg	His	Ser	Ala	Arg	Asp	Arg	Gln	Cys	Ala
	275						280					285			
Arg	Val	Leu	Ala	Asp	Glu	Arg	Ser	Pro	Gln	Pro	Gly	Ala	Ser	Pro	Gln
	290					295					300				
Glu	Asp	Ile	Ala	Asn	Phe	Gln	Val	Leu	Val	Lys	Ile	Leu	Pro	Val	Met
305					310					315					320
Val	Thr	Leu	Val	Pro	Tyr	Trp	Met	Val	Tyr	Phe	Gln	Met	Gln	Ser	Thr
			325						330					335	
Tyr	Val	Leu	Gln	Gly	Leu	His	Leu	His	Ile	Pro	Asn	Ile	Phe	Pro	Ala
			340					345					350		
Asn	Pro	Ala	Asn	Ile	Ser	Val	Ala	Leu	Arg	Ala	Gln	Gly	Ser	Ser	Tyr
	355						360					365			
Thr	Ile	Pro	Glu	Ala	Trp	Leu	Leu	Leu	Ala	Asn	Val	Val	Val	Val	Leu
	370					375					380				
Ile	Leu	Val	Pro	Leu	Lys	Asp	Arg	Leu	Ile	Asp	Pro	Leu	Leu	Leu	Arg
385					390					395					400
Cys	Lys	Leu	Leu	Pro	Ser	Ala	Leu	Gln	Lys	Met	Ala	Leu	Gly	Met	Phe
			405						410					415	
Phe	Gly	Phe	Thr	Ser	Val	Ile	Val	Ala	Gly	Val	Leu	Glu	Met	Glu	Arg
			420					425					430		
Leu	His	Tyr	Ile	His	His	Asn	Glu	Thr	Val	Ser	Gln	Gln	Ile	Gly	Glu
	435						440					445			
Val	Leu	Tyr	Asn	Ala	Ala	Pro	Leu	Ser	Ile	Trp	Trp	Gln	Ile	Pro	Gln
	450					455					460				
Tyr	Leu	Leu	Ile	Gly	Ile	Ser	Glu	Ile	Phe	Ala	Ser	Ile	Pro	Gly	Leu
465					470					475					480
Glu	Phe	Ala	Tyr	Ser	Glu	Ala	Pro	Arg	Ser	Met	Gln	Gly	Ala	Ile	Met
			485						490					495	
Gly	Ile	Phe	Phe	Cys	Leu	Ser	Gly	Val	Gly	Ser	Leu	Leu	Gly	Ser	Ser
			500					505					510		
Leu	Val	Ala	Leu	Leu	Ser	Leu	Pro	Gly	Gly	Trp	Leu	His	Cys	Pro	Lys
	515						520					525			
Asp	Phe	Gly	Asn	Ile	Asn	Asn	Cys	Arg	Met	Asp	Leu	Tyr	Phe	Phe	Leu
	530					535					540				
Leu	Ala	Gly	Ile	Gln	Ala	Val	Thr	Ala	Leu	Leu	Phe	Val	Trp	Ile	Ala
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Ser Arg Asp Arg Gly  
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<210> 69  
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<212> DNA  
<213> Homo Sapiens

<220>  
<221> CDS  
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gag aaa aag aaa aca aga cgc tgc aat gga ttc aag atg ttc ttg gca 96  
Glu Lys Lys Lys Thr Arg Arg Cys Asn Gly Phe Lys Met Phe Leu Ala  
20 25 30  
gcc ctg tca ttc agc tat att gct aaa gca cta ggt gga atc att atg 144  
Ala Leu Ser Phe Ser Tyr Ile Ala Lys Ala Leu Gly Gly Ile Ile Met  
35 40 45  
aaa att tcc atc act caa ata gaa agg aga ttt gac ata tcc tct tct 192  
Lys Ile Ser Ile Thr Gln Ile Glu Arg Arg Phe Asp Ile Ser Ser Ser  
50 55 60  
ctt gct ggt tta att gat gga agc ttt gaa att gga aat ttg ctt gtg 240  
Leu Ala Gly Leu Ile Asp Gly Ser Phe Glu Ile Gly Asn Leu Leu Val  
65 70 75 80  
att gta ttt gta agt tac ttt gga tct aaa cta cac aga ccg aag tta 288  
Ile Val Phe Val Ser Tyr Phe Gly Ser Lys Leu His Arg Pro Lys Leu  
85 90 95  
att gga att ggt tgt ctc ctt atg gga act gga agt att ttg aca tct 336  
Ile Gly Ile Gly Cys Leu Leu Met Gly Thr Gly Ser Ile Leu Thr Ser  
100 105 110  
tta cca cat ttc ttc atg gga tat tat agg tat tct aaa gaa acc cat 384  
Leu Pro His Phe Phe Met Gly Tyr Tyr Arg Tyr Ser Lys Glu Thr His  
115 120 125  
att aat cca tca gaa aat tca aca tca agt tta tca acc tgt tta att 432  
Ile Asn Pro Ser Glu Asn Ser Thr Ser Ser Leu Ser Thr Cys Leu Ile  
130 135 140  
aat caa acc tta tca ttc aat gga aca tca cct gag ata gta gaa aaa 480  
Asn Gln Thr Leu Ser Phe Asn Gly Thr Ser Pro Glu Ile Val Glu Lys  
145 150 155 160  
gat tgt gta aag gaa tct ggg tca cac atg tgg atc tat gtc ttc atg 528  
Asp Cys Val Lys Glu Ser Gly Ser His Met Trp Ile Tyr Val Phe Met  
165 170 175  
ggg aat atg ctt cgt ggc ata ggg gaa acc ccc ata gta cca ttg ggg 576  
Gly Asn Met Leu Arg Gly Ile Gly Glu Thr Pro Ile Val Pro Leu Gly

180										185					190					
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Ile Ser Tyr Ile Asp Asp Phe Ala Lys Glu Gly His Ser Ser Leu Tyr																				
195 200 205																				
tta ggt agt ttg aat gca ata gga atg att ggt cca gtc att ggc ttt	672																			
Leu Gly Ser Leu Asn Ala Ile Gly Met Ile Gly Pro Val Ile Gly Phe																				
210 215 220																				
gca ctg gga tct ctg ttt gct aaa atg tac gtg gat att gga tat gta	720																			
Ala Leu Gly Ser Leu Phe Ala Lys Met Tyr Val Asp Ile Gly Tyr Val																				
225 230 235 240																				
gat ctg agc act atc aga ata act cct aag gac tct cgt tgg gtt gga	768																			
Asp Leu Ser Thr Ile Arg Ile Thr Pro Lys Asp Ser Arg Trp Val Gly																				
245 250 255																				
gct tgg tgg ctt ggt ttc ctt gtg tct gga cta ttt tcc att att tct	816																			
Ala Trp Trp Leu Gly Phe Leu Val Ser Gly Leu Phe Ser Ile Ile Ser																				
260 265 270																				
tcc ata cca ttt ttt ttc ttg ccg aaa aat cca aat aaa cca caa aaa	864																			
Ser Ile Pro Phe Phe Phe Leu Pro Lys Asn Pro Asn Lys Pro Gln Lys																				
275 280 285																				
gaa aga aaa att tca cta tca ttg cat gtg ctg aaa aca aat gat gat	912																			
Glu Arg Lys Ile Ser Leu Ser Leu His Val Leu Lys Thr Asn Asp Asp																				
290 295 300																				
aga aat caa aca gct aat ttg acc aac caa gga aaa aat gtt acc aaa	960																			
Arg Asn Gln Thr Ala Asn Leu Thr Asn Gln Gly Lys Asn Val Thr Lys																				
305 310 315 320																				
aat gtg act ggt ttt ttc cag tct ttg aaa agc atc ctt acc aat ccc	1008																			
Asn Val Thr Gly Phe Phe Gln Ser Leu Lys Ser Ile Leu Thr Asn Pro																				
325 330 335																				
ctg tat gtt ata ttt ctg ctt ttg aca ttg tta caa gta agc agc ttt	1056																			
Leu Tyr Val Ile Phe Leu Leu Leu Thr Leu Leu Gln Val Ser Ser Phe																				
340 345 350																				
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Ile Gly Ser Phe Thr Tyr Val Phe Lys Tyr Met Glu Gln Gln Tyr Gly																				
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Gln Ser Ala Ser His Ala Asn Phe Leu Leu Gly Ile Ile Thr Ile Pro																				
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Thr Val Ala Thr Gly Met Phe Leu Gly Gly Phe Ile Ile Lys Lys Phe																				
385 390 395 400																				
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Lys Leu Ser Leu Val Gly Ile Ala Lys Phe Ser Phe Leu Thr Ser Met																				
405 410 415																				
ata tcc ttc ttg ttt caa ctt cta tat ttc cct cta atc tgc gaa agc	1296																			
Ile Ser Phe Leu Phe Gln Leu Leu Tyr Phe Pro Leu Ile Cys Glu Ser																				
420 425 430																				



aaa tca gtt gcc ggc cta acc ttg acc tat gat gga aat aat tca gtg	1344
Lys Ser Val Ala Gly Leu Thr Leu Thr Tyr Asp Gly Asn Asn Ser Val	
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gca tct cat gta gat gta cca ctt tct tat tgc aac tca gag tgc aat	1392
Ala Ser His Val Asp Val Pro Leu Ser Tyr Cys Asn Ser Glu Cys Asn	
450 455 460	
tgt gat gaa agt cag tgg gaa cca gtc tgt ggg aac aat gga ata act	1440
Cys Asp Glu Ser Gln Trp Glu Pro Val Cys Gly Asn Asn Gly Ile Thr	
465 470 475 480	
tac ctg tca cct tgt cta gca gga tgc aaa tcc tca agt ggt att aaa	1488
Tyr Leu Ser Pro Cys Leu Ala Gly Cys Lys Ser Ser Ser Gly Ile Lys	
485 490 495	
aag cat aca gtg ttt tat aac tgt agt tgt gtg gaa gta act ggt ctc	1536
Lys His Thr Val Phe Tyr Asn Cys Ser Cys Val Glu Val Thr Gly Leu	
500 505 510	
cag aac aga aat tac tca gca cac ttg ggt gaa tgc cca aga gat aat	1584
Gln Asn Arg Asn Tyr Ser Ala His Leu Gly Glu Cys Pro Arg Asp Asn	
515 520 525	
act tgt aca agg aaa ttt ttc atc tat gtt gca att caa gtc ata aac	1632
Thr Cys Thr Arg Lys Phe Phe Ile Tyr Val Ala Ile Gln Val Ile Asn	
530 535 540	
tct ttg ttc tct gca aca gga ggt acc aca ttt atc ttg ttg act gtg	1680
Ser Leu Phe Ser Ala Thr Gly Gly Thr Thr Phe Ile Leu Leu Thr Val	
545 550 555 560	
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Lys Ile Val Gln Pro Glu Leu Lys Ala Leu Ala Met Gly Phe Gln Ser	
565 570 575	
atg gtt ata aga aca cta gga gga att cta gct cca ata tat ttt ggg	1776
Met Val Ile Arg Thr Leu Gly Gly Ile Leu Ala Pro Ile Tyr Phe Gly	
580 585 590	
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Ala Leu Ile Asp Lys Thr Cys Met Lys Trp Ser Thr Asn Ser Cys Gly	
595 600 605	
gca caa gga gct tgt agg ata tat aat tcc gta ttt ttt gga agg gtc	1872
Ala Gln Gly Ala Cys Arg Ile Tyr Asn Ser Val Phe Phe Gly Arg Val	
610 615 620	
tac ttg ggc tta tct ata gct tta aga ttc cca gca ctt gtt tta tat	1920
Tyr Leu Gly Leu Ser Ile Ala Leu Arg Phe Pro Ala Leu Val Leu Tyr	
625 630 635 640	
att gtt ttc att ttt gct atg aag aaa aaa ttt caa gga aaa gat acc	1968
Ile Val Phe Ile Phe Ala Met Lys Lys Lys Phe Gln Gly Lys Asp Thr	
645 650 655	
aag gca tcg gac aat gaa aga aaa gta atg gat gaa gca aac tta gaa	2016
Lys Ala Ser Asp Asn Glu Arg Lys Val Met Asp Glu Ala Asn Leu Glu	
660 665 670	
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Phe Leu Asn Asn Gly Glu His Phe Val Pro Ser Ala Gly Thr Asp Ser	

675

680

685

aaa aca tgt aat ttg gac atg caa gac aat gct gct gcc aac taa  
 Lys Thr Cys Asn Leu Asp Met Gln Asp Asn Ala Ala Ala Asn \*  
 690 695 700

2109

&lt;210&gt; 70

&lt;211&gt; 702

&lt;212&gt; PRT

&lt;213&gt; Homo Sapiens

&lt;400&gt; 70

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 Ala Leu Ser Phe Ser Tyr Ile Ala Lys Ala Leu Gly Gly Ile Ile Met  
 35 40 45  
 Lys Ile Ser Ile Thr Gln Ile Glu Arg Arg Phe Asp Ile Ser Ser Ser  
 50 55 60  
 Leu Ala Gly Leu Ile Asp Gly Ser Phe Glu Ile Gly Asn Leu Leu Val  
 65 70 75 80  
 Ile Val Phe Val Ser Tyr Phe Gly Ser Lys Leu His Arg Pro Lys Leu  
 85 90 95  
 Ile Gly Ile Gly Cys Leu Leu Met Gly Thr Gly Ser Ile Leu Thr Ser  
 100 105 110  
 Leu Pro His Phe Phe Met Gly Tyr Arg Tyr Ser Lys Glu Thr His  
 115 120 125  
 Ile Asn Pro Ser Glu Asn Ser Thr Ser Ser Leu Ser Thr Cys Leu Ile  
 130 135 140  
 Asn Gln Thr Leu Ser Phe Asn Gly Thr Ser Pro Glu Ile Val Glu Lys  
 145 150 155 160  
 Asp Cys Val Lys Glu Ser Gly Ser His Met Trp Ile Tyr Val Phe Met  
 165 170 175  
 Gly Asn Met Leu Arg Gly Ile Gly Glu Thr Pro Ile Val Pro Leu Gly  
 180 185 190  
 Ile Ser Tyr Ile Asp Asp Phe Ala Lys Glu Gly His Ser Ser Leu Tyr  
 195 200 205  
 Leu Gly Ser Leu Asn Ala Ile Gly Met Ile Gly Pro Val Ile Gly Phe  
 210 215 220  
 Ala Leu Gly Ser Leu Phe Ala Lys Met Tyr Val Asp Ile Gly Tyr Val  
 225 230 235 240  
 Asp Leu Ser Thr Ile Arg Ile Thr Pro Lys Asp Ser Arg Trp Val Gly  
 245 250 255  
 Ala Trp Trp Leu Gly Phe Leu Val Ser Gly Leu Phe Ser Ile Ile Ser  
 260 265 270  
 Ser Ile Pro Phe Phe Phe Leu Pro Lys Asn Pro Asn Lys Pro Gln Lys  
 275 280 285  
 Glu Arg Lys Ile Ser Leu Ser Leu His Val Leu Lys Thr Asn Asp Asp  
 290 295 300  
 Arg Asn Gln Thr Ala Asn Leu Thr Asn Gln Gly Lys Asn Val Thr Lys  
 305 310 315 320  
 Asn Val Thr Gly Phe Phe Gln Ser Leu Lys Ser Ile Leu Thr Asn Pro  
 325 330 335  
 Leu Tyr Val Ile Phe Leu Leu Leu Thr Leu Leu Gln Val Ser Ser Phe  
 340 345 350  
 Ile Gly Ser Phe Thr Tyr Val Phe Lys Tyr Met Glu Gln Gln Tyr Gly  
 355 360 365  
 Gln Ser Ala Ser His Ala Asn Phe Leu Leu Gly Ile Ile Thr Ile Pro  
 370 375 380



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Lys	Val	Arg	Leu	Lys	Lys	Leu	Glu	Gln	Leu	Leu	Leu	Asp	Gly	Pro	Trp	
	5					10					15					
cgc	aac	gag	agc	gcc	ctg	agc	gtg	gaa	acg	ctg	ctc	gac	gtg	ctc	gtc	394
Arg	Asn	Glu	Ser	Ala	Leu	Ser	Val	Glu	Thr	Leu	Leu	Asp	Val	Leu	Val	
	20				25					30					35	
tgc	ctg	tac	acc	gag	tgc	agc	cac	tgc	gcc	ctg	cgc	cgc	gac	aag	tac	442
Cys	Leu	Tyr	Thr	Glu	Cys	Ser	His	Ser	Ala	Leu	Arg	Arg	Asp	Lys	Tyr	
				40					45					50		
gtg	gcc	gag	ttc	ctc	gag	tgg	gct	aaa	cca	ttt	aca	cag	ctg	gtg	aaa	490
Val	Ala	Glu	Phe	Leu	Glu	Trp	Ala	Lys	Pro	Phe	Thr	Gln	Leu	Val	Lys	
			55					60					65			
gaa	atg	cag	ctt	cat	cga	gaa	gac	ttt	gaa	ata	att	aaa	gta	att	gga	538
Glu	Met	Gln	Leu	His	Arg	Glu	Asp	Phe	Glu	Ile	Ile	Lys	Val	Ile	Gly	
		70					75					80				
aga	ggg	gct	ttt	ggg	gag	gtt	gct	gtt	gtc	aaa	atg	aag	aat	act	gaa	586
Arg	Gly	Ala	Phe	Gly	Glu	Val	Ala	Val	Val	Lys	Met	Lys	Asn	Thr	Glu	
	85					90					95					
cga	att	tat	gca	atg	aaa	atc	ctc	aac	aag	tgg	gag	atg	ctg	aaa	aga	634
Arg	Ile	Tyr	Ala	Met	Lys	Ile	Leu	Asn	Lys	Trp	Glu	Met	Leu	Lys	Arg	
100					105					110				115		
gca	gag	acc	gcg	tgc	ttc	cga	gag	gag	cgc	gat	gtg	ctg	gtg	aac	ggc	682
Ala	Glu	Thr	Ala	Cys	Phe	Arg	Glu	Glu	Arg	Asp	Val	Leu	Val	Asn	Gly	
				120					125					130		
gac	tgc	cag	tgg	atc	acc	gcg	ctg	cac	tac	gcc	ttt	cag	gac	gag	aac	730
Asp	Cys	Gln	Trp	Ile	Thr	Ala	Leu	His	Tyr	Ala	Phe	Gln	Asp	Glu	Asn	
			135					140					145			
cac	ctg	tac	tta	gtc	atg	gat	tac	tat	gtg	ggg	ggg	gat	tta	ctg	acc	778
His	Leu	Tyr	Leu	Val	Met	Asp	Tyr	Tyr	Val	Gly	Gly	Asp	Leu	Leu	Thr	
		150					155					160				
ctg	ctc	agc	aaa	ttt	gaa	gac	aag	ctt	ccg	gaa	gat	atg	gcg	agg	ttc	826
Leu	Leu	Ser	Lys	Phe	Glu	Asp	Lys	Leu	Pro	Glu	Asp	Met	Ala	Arg	Phe	
	165					170					175					
tac	att	ggg	gaa	atg	gtg	ctg	gcc	att	gac	tcc	atc	cat	cag	ctt	cat	874
Tyr	Ile	Gly	Glu	Met	Val	Leu	Ala	Ile	Asp	Ser	Ile	His	Gln	Leu	His	
180					185				190						195	
tac	gtg	cac	aga	gac	att	aaa	cct	gac	aat	gtc	ctt	ttg	gac	gtg	aat	922
Tyr	Val	His	Arg	Asp	Ile	Lys	Pro	Asp	Asn	Val	Leu	Leu	Asp	Val	Asn	
				200					205					210		
ggg	cat	atc	cgc	ctg	gct	gac	ttt	gga	tca	tgt	ttg	aag	atg	aat	gat	970
Gly	His	Ile	Arg	Leu	Ala	Asp	Phe	Gly	Ser	Cys	Leu	Lys	Met	Asn	Asp	
			215					220					225			
gat	ggc	act	gtg	cag	tcc	tcc	gtg	gcc	gtg	ggc	aca	cct	gac	tac	atc	1018
Asp	Gly	Thr	Val	Gln	Ser	Ser	Val	Ala	Val	Gly	Thr	Pro	Asp	Tyr	Ile	
		230					235					240				

tcg ccg gag atc ctg cag gcg atg gag gac ggc atg ggc aaa tac ggg .	1066
Ser Pro Glu Ile Leu Gln Ala Met Glu Asp Gly Met Gly Lys Tyr Gly	
245 250 255	
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Pro Glu Cys Asp Trp Trp Ser Leu Gly Val Cys Met Tyr Glu Met Leu	
260 265 270 275	
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Tyr Gly Glu Thr Pro Phe Tyr Ala Glu Ser Leu Val Glu Thr Tyr Gly	
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Lys Ile Met Asn His Glu Glu Arg Phe Gln Phe Pro Ser His Val Thr	
295 300 305	
gat gta tct gaa gaa gcg aag gac ctc atc cag aga ctg atc tgc agt	1258
Asp Val Ser Glu Glu Ala Lys Asp Leu Ile Gln Arg Leu Ile Cys Ser	
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Arg Glu Arg Arg Leu Gly Gln Asn Gly Ile Glu Asp Phe Lys Lys His	
325 330 335	
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Ala Phe Phe Glu Gly Leu Asn Trp Glu Asn Ile Arg Asn Leu Glu Ala	
340 345 350 355	
cct tat att cct gat gtg agc agt ccc tct gac aca tcc aac ttc gac	1402
Pro Tyr Ile Pro Asp Val Ser Ser Pro Ser Asp Thr Ser Asn Phe Asp	
360 365 370	
gtg gat gac gac gtg ctg aga aac acg gaa ata tta cct cct ggt tct	1450
Val Asp Asp Asp Val Leu Arg Asn Thr Glu Ile Leu Pro Pro Gly Ser	
375 380 385	
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His Thr Gly Phe Ser Gly Leu His Leu Pro Phe Ile Gly Phe Thr Phe	
390 395 400	
aca acg gaa agc tgt ttt tct gat cga ggc tct ctg aag agc ata atg	1546
Thr Thr Glu Ser Cys Phe Ser Asp Arg Gly Ser Leu Lys Ser Ile Met	
405 410 415	
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Gln Ser Asn Thr Leu Thr Lys Asp Glu Asp Val Gln Arg Asp Leu Glu	
420 425 430 435	
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His Ser Leu Gln Met Glu Ala Tyr Glu Arg Arg Ile Arg Arg Leu Glu	
440 445 450	
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Gln Glu Lys Leu Glu Leu Ser Arg Lys Leu Gln Glu Ser Thr Gln Thr	
455 460 465	
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Val Gln Ser Leu His Gly Ser Ser Arg Ala Leu Ser Asn Ser Asn Arg	
470 475 480	
gat aaa gaa atc aaa aag cta aat gaa gaa atc gaa cgc ttg aag aat	1786
Asp Lys Glu Ile Lys Lys Leu Asn Glu Glu Ile Glu Arg Leu Lys Asn	

485	490	495	
aaa ata gca gat tca aac agg ctg gag cga cag ctt gag gac aca gtg Lys Ile Ala Asp Ser Asn Arg Leu Glu Arg Gln Leu Glu Asp Thr Val 500 505 510 515			1834
gcg ctt cgc caa gag cgt gag gac tcc acg cag cgg ctg cgg ggg ctg Ala Leu Arg Gln Glu Arg Glu Asp Ser Thr Gln Arg Leu Arg Gly Leu 520 525 530			1882
gag aag cag cac cgc gtg gtc cgg cag gag aag gag gag ctg cac aag Glu Lys Gln His Arg Val Val Arg Gln Glu Lys Glu Glu Leu His Lys 535 540 545			1930
caa ctg gtt gaa gcc tca gag cgg ttg aaa tcc cag gcc aag gaa ctc Gln Leu Val Glu Ala Ser Glu Arg Leu Lys Ser Gln Ala Lys Glu Leu 550 555 560			1978
aaa gat gcc cat cag cag cga aag ctg gcc ctg cag gag ttc tcg gag Lys Asp Ala His Gln Gln Arg Lys Leu Ala Leu Gln Glu Phe Ser Glu 565 570 575			2026
ctg aac gag cgc atg gca gag ctc cgt gcc cag aag cag aag gtg tcc Leu Asn Glu Arg Met Ala Glu Leu Arg Ala Gln Lys Gln Lys Val Ser 580 585 590 595			2074
cgg cag ctg cga gac aag gag gag gag atg gag gtg gcc acg cag aag Arg Gln Leu Arg Asp Lys Glu Glu Glu Met Glu Val Ala Thr Gln Lys 600 605 610			2122
gtg gac gcc atg cgg cag gaa atg cgg aga gct gag aag ctc agg aaa Val Asp Ala Met Arg Gln Glu Met Arg Arg Ala Glu Lys Leu Arg Lys 615 620 625			2170
gag ctg gaa gct cag ctt gat gat gct gtt gct gag gcc tcc aag gag Glu Leu Glu Ala Gln Leu Asp Asp Ala Val Ala Glu Ala Ser Lys Glu 630 635 640			2218
cgc aag ctt cgt gag cac agc gag aac ttc tgc aag caa atg gaa agc Arg Lys Leu Arg Glu His Ser Glu Asn Phe Cys Lys Gln Met Glu Ser 645 650 655			2266
gag ctg gag gcc ctc aag gtg aag caa gga ggc cgg gga gcg ggt gcc Glu Leu Glu Ala Leu Lys Val Lys Gln Gly Gly Arg Gly Ala Gly Ala 660 665 670 675			2314
acc tta gag cac cag caa gag att tcc aaa atc aaa tcc gag ctg gag Thr Leu Glu His Gln Gln Glu Ile Ser Lys Ile Lys Ser Glu Leu Glu 680 685 690			2362
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cat gtg cta gaa gtg aaa aat gtg aag aag gag gtg cat gat tca gaa His Val Leu Glu Val Lys Asn Val Lys Lys Glu Val His Asp Ser Glu 710 715 720			2458
agc cac cag ctg gcc ctg cag aaa gaa atc ttg atg tta aaa gat aag Ser His Gln Leu Ala Leu Gln Lys Glu Ile Leu Met Leu Lys Asp Lys 725 730 735			2506

tta gaa aag tca aag cga gaa cgg cat aac gag atg gag gag gca gta	2554
Leu Glu Lys Ser Lys Arg Glu Arg His Asn Glu Met Glu Glu Ala Val	
740 745 750 755	
ggt aca ata aaa gat aaa tac gaa cga gaa aga gcg atg ctg ttt gat	2602
Gly Thr Ile Lys Asp Lys Tyr Glu Arg Glu Arg Ala Met Leu Phe Asp	
760 765 770	
gaa aac aag aag cta act gct gaa aat gaa aag ctc tgt tcc ttt gtg	2650
Glu Asn Lys Lys Leu Thr Ala Glu Asn Glu Lys Leu Cys Ser Phe Val	
775 780 785	
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Asp Lys Leu Thr Ala Gln Asn Arg Gln Leu Glu Asp Glu Leu Gln Asp	
790 795 800	
ctg gca gcc aag aag gag tca gtg gcc cac tgg gaa gct cag att gcg	2746
Leu Ala Ala Lys Lys Glu Ser Val Ala His Trp Glu Ala Gln Ile Ala	
805 810 815	
gaa atc att cag tgg gtc agt gac gag aaa gat gcc cgg ggt tac ctt	2794
Glu Ile Ile Gln Trp Val Ser Asp Glu Lys Asp Ala Arg Gly Tyr Leu	
820 825 830 835	
caa gct ctt gct tcc aag atg acc gaa gag ctc gag gct ttg agg agt	2842
Gln Ala Leu Ala Ser Lys Met Thr Glu Glu Leu Glu Ala Leu Arg Ser	
840 845 850	
tct agt ctg ggg tca aga aca ctg gac ccg ctg tgg aag gtg cgc cgc	2890
Ser Ser Leu Gly Ser Arg Thr Leu Asp Pro Leu Trp Lys Val Arg Arg	
855 860 865	
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Ser Gln Lys Leu Asp Met Ser Ala Arg Leu Glu Leu Gln Ser Ala Leu	
870 875 880	
gag gcg gag atc cgg gcc aag cag ctt gtc cag gag gag ctc agg aag	2986
Glu Ala Glu Ile Arg Ala Lys Gln Leu Val Gln Glu Glu Leu Arg Lys	
885 890 895	
gtc aag gac gcc aac ctc acc ttg gaa agc aaa cta aag gat tcc gaa	3034
Val Lys Asp Ala Asn Leu Thr Leu Glu Ser Lys Leu Lys Asp Ser Glu	
900 905 910 915	
gcc aaa aac aga gaa tta tta gaa gaa atg gaa att ttg aag aaa aag	3082
Ala Lys Asn Arg Glu Leu Leu Glu Glu Met Glu Ile Leu Lys Lys Lys	
920 925 930	
atg gaa gaa aaa ttc aga gca gat act ggg ctc aaa ctt cca gat ttt	3130
Met Glu Glu Lys Phe Arg Ala Asp Thr Gly Leu Lys Leu Pro Asp Phe	
935 940 945	
cag gat tcc att ttt gag tat ttc aac act gct cct ctt gca cat gac	3178
Gln Asp Ser Ile Phe Glu Tyr Phe Asn Thr Ala Pro Leu Ala His Asp	
950 955 960	
ctg aca ttt aga acc agc tca gct agt gag caa gaa aca caa gct ccg	3226
Leu Thr Phe Arg Thr Ser Ser Ala Ser Glu Gln Glu Thr Gln Ala Pro	
965 970 975	
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Lys Pro Glu Ala Ser Pro Ser Met Ser Val Ala Ala Ser Glu Gln Gln	

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acc acg cag gcc ctg gtt ctg gct gga ccg aag cca aaa gct cac cag Thr Thr Gln Ala Leu Val Leu Ala Gly Pro Lys Pro Lys Ala His Gln 1015 1020 1025	3370		
ttc agc atc aag tcc ttc tcc agc cct act cag tgc agc cac tgc acc Phe Ser Ile Lys Ser Phe Ser Pro Thr Gln Cys Ser His Cys Thr 1030 1035 1040	3418		
tcc ctg atg gtt ggg ctg atc cgg cag ggc tac gcc tgc gag gtg tgt Ser Leu Met Val Gly Leu Ile Arg Gln Gly Tyr Ala Cys Glu Val Cys 1045 1050 1055	3466		
tcc ttt gct tgc cac gtg tcc tgc aaa gac ggt gcc ccc cag gtg tgc Ser Phe Ala Cys His Val Ser Cys Lys Asp Gly Ala Pro Gln Val Cys 1060 1065 1070 1075	3514		
cca ata cct ccc gag cag tcc aag agg cct ctg ggc gtg gac gtg cag Pro Ile Pro Pro Glu Gln Ser Lys Arg Pro Leu Gly Val Asp Val Gln 1080 1085 1090	3562		
cga ggc atc gga aca gcc tac aaa ggc cat gtc aag gtc cca aag ccc Arg Gly Ile Gly Thr Ala Tyr Lys Gly His Val Lys Val Pro Lys Pro 1095 1100 1105	3610		
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aag tgg gtt ggg att cta gaa gga ctc cag tcc atc ctt cat aaa aac Lys Trp Val Gly Ile Leu Glu Gly Leu Gln Ser Ile Leu His Lys Asn 1205 1210 1215	3946		
cgg ctg agg aat cag gtc gtg cat gtt ccc ttg gaa gcc tac gac agc Arg Leu Arg Asn Gln Val Val His Val Pro Leu Glu Ala Tyr Asp Ser 1220 1225 1230 1235	3994		



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Ser Leu Pro Leu Ile Lys Ala Ile Leu Thr Ala Ala Ile Val Asp Ala	
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Asp Arg Ile Ala Val Gly Leu Glu Glu Gly Leu Tyr Val Ile Glu Val	
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acc cga gat gtg atc gtc cgt gcc gct gac tgt aag aag gta cac cag	4138
Thr Arg Asp Val Ile Val Arg Ala Ala Asp Cys Lys Lys Val His Gln	
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atc gag ctt gct ccc agg gag aag atc gta atc ctc ctc tgt ggc cgg	4186
Ile Glu Leu Ala Pro Arg Glu Lys Ile Val Ile Leu Leu Cys Gly Arg	
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Asn His His Val His Leu Tyr Pro Trp Ser Ser Leu Asp Gly Ala Glu	
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ggc agc ttt gac atc aag ctt ccg gaa acc aaa ggc tgc cag ctc atg	4282
Gly Ser Phe Asp Ile Lys Leu Pro Glu Thr Lys Gly Cys Gln Leu Met	
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Ala Thr Ala Thr Leu Lys Arg Asn Ser Gly Thr Cys Leu Phe Val Ala	
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Val Lys Arg Leu Ile Leu Cys Tyr Glu Ile Gln Arg Thr Lys Pro Phe	
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His Arg Lys Phe Asn Glu Ile Val Ala Pro Gly Ser Val Gln Cys Leu	
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Ala Val Leu Arg Asp Arg Leu Cys Val Gly Tyr Pro Ser Gly Phe Cys	
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Leu Leu Ser Ile Gln Gly Asp Gly Gln Pro Leu Asn Leu Val Asn Pro	
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Asn Asp Pro Ser Leu Ala Phe Leu Ser Gln Gln Ser Phe Asp Ala Leu	
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Cys Ala Val Glu Leu Glu Ser Glu Glu Tyr Leu Leu Cys Phe Ser His	
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Leu Met Trp Pro Ala Ala Pro Val Ala Cys Ser Cys Ser Pro Thr His	
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Val Thr Val Tyr Ser Glu Tyr Gly Val Asp Val Phe Asp Val Arg Thr	

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Met Glu Trp Val Gln Thr Ile Gly Leu Arg Arg Ile Arg Pro Leu Asn			
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Ser Glu Gly Thr Leu Asn Leu Leu Asn Cys Glu Pro Pro Arg Leu Ile			
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Tyr Phe Lys Ser Lys Phe Ser Gly Ala Val Leu Asn Val Pro Asp Thr			
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Ser Asp Asn Ser Lys Lys Gln Met Leu Arg Thr Arg Ser Lys Arg Arg			
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Asn Phe Asn His Val Ala His Met Gly Pro Gly Asp Gly Met Gln Val			
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Leu Met Asp Leu Pro Leu Ser Ala Val Pro Pro Ser Gln Glu Glu Arg			
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Pro Gly Pro Ala Pro Thr Asn Leu Ala Arg Gln Pro Pro Ser Arg Asn			
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Lys Pro Tyr Ile Ser Trp Pro Ser Ser Gly Gly Ser Glu Pro Ser Val			
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Thr Val Pro Leu Arg Ser Met Ser Asp Pro Asp Gln Asp Phe Asp Lys			
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Glu Pro Asp Ser Asp Ser Thr Lys His Ser Thr Pro Ser Asn Ser Ser			
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<210> 72

<211> 1711

<212> PRT

<213> Homo Sapiens

<400> 72

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Val Leu Val Cys Leu Tyr Thr Glu Cys Ser His Ser Ala Leu Arg Arg
35          40          45
Asp Lys Tyr Val Ala Glu Phe Leu Glu Trp Ala Lys Pro Phe Thr Gln
50          55          60
Leu Val Lys Glu Met Gln Leu His Arg Glu Asp Phe Glu Ile Ile Lys
65          70          75          80
Val Ile Gly Arg Gly Ala Phe Gly Glu Val Ala Val Val Lys Met Lys
85          90          95
Asn Thr Glu Arg Ile Tyr Ala Met Lys Ile Leu Asn Lys Trp Glu Met
100         105         110
Leu Lys Arg Ala Glu Thr Ala Cys Phe Arg Glu Glu Arg Asp Val Leu
115         120         125
Val Asn Gly Asp Cys Gln Trp Ile Thr Ala Leu His Tyr Ala Phe Gln
130         135         140
Asp Glu Asn His Leu Tyr Leu Val Met Asp Tyr Tyr Val Gly Gly Asp
145         150         155         160
Leu Leu Thr Leu Leu Ser Lys Phe Glu Asp Lys Leu Pro Glu Asp Met
165         170         175
Ala Arg Phe Tyr Ile Gly Glu Met Val Leu Ala Ile Asp Ser Ile His
180         185         190
Gln Leu His Tyr Val His Arg Asp Ile Lys Pro Asp Asn Val Leu Leu
195         200         205
Asp Val Asn Gly His Ile Arg Leu Ala Asp Phe Gly Ser Cys Leu Lys
210         215         220
Met Asn Asp Asp Gly Thr Val Gln Ser Ser Val Ala Val Gly Thr Pro
225         230         235         240
Asp Tyr Ile Ser Pro Glu Ile Leu Gln Ala Met Glu Asp Gly Met Gly
245         250         255
Lys Tyr Gly Pro Glu Cys Asp Trp Trp Ser Leu Gly Val Cys Met Tyr
260         265         270
Glu Met Leu Tyr Gly Glu Thr Pro Phe Tyr Ala Glu Ser Leu Val Glu
275         280         285

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Thr	Tyr	Gly	Lys	Ile	Met	Asn	His	Glu	Glu	Arg	Phe	Gln	Phe	Pro	Ser
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His	Val	Thr	Asp	Val	Ser	Glu	Glu	Ala	Lys	Asp	Leu	Ile	Gln	Arg	Leu
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Ile	Cys	Ser	Arg	Glu	Arg	Arg	Leu	Gly	Gln	Asn	Gly	Ile	Glu	Asp	Phe
				325					330					335	
Lys	Lys	His	Ala	Phe	Phe	Glu	Gly	Leu	Asn	Trp	Glu	Asn	Ile	Arg	Asn
			340					345					350		
Leu	Glu	Ala	Pro	Tyr	Ile	Pro	Asp	Val	Ser	Ser	Pro	Ser	Asp	Thr	Ser
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Asn	Phe	Asp	Val	Asp	Asp	Asp	Val	Leu	Arg	Asn	Thr	Glu	Ile	Leu	Pro
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Pro	Gly	Ser	His	Thr	Gly	Phe	Ser	Gly	Leu	His	Leu	Pro	Phe	Ile	Gly
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Phe	Thr	Phe	Thr	Thr	Glu	Ser	Cys	Phe	Ser	Asp	Arg	Gly	Ser	Leu	Lys
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Ser	Ile	Met	Gln	Ser	Asn	Thr	Leu	Thr	Lys	Asp	Glu	Asp	Val	Gln	Arg
			420					425					430		
Asp	Leu	Glu	His	Ser	Leu	Gln	Met	Glu	Ala	Tyr	Glu	Arg	Arg	Ile	Arg
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Arg	Leu	Glu	Gln	Glu	Lys	Leu	Glu	Leu	Ser	Arg	Lys	Leu	Gln	Glu	Ser
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Thr	Gln	Thr	Val	Gln	Ser	Leu	His	Gly	Ser	Ser	Arg	Ala	Leu	Ser	Asn
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Ser	Asn	Arg	Asp	Lys	Glu	Ile	Lys	Lys	Leu	Asn	Glu	Glu	Ile	Glu	Arg
				485				490						495	
Leu	Lys	Asn	Lys	Ile	Ala	Asp	Ser	Asn	Arg	Leu	Glu	Arg	Gln	Leu	Glu
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Arg	Gly	Leu	Glu	Lys	Gln	His	Arg	Val	Val	Arg	Gln	Glu	Lys	Glu	Glu
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Leu	His	Lys	Gln	Leu	Val	Glu	Ala	Ser	Glu	Arg	Leu	Lys	Ser	Gln	Ala
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Lys	Glu	Leu	Lys	Asp	Ala	His	Gln	Gln	Arg	Lys	Leu	Ala	Leu	Gln	Glu
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Phe	Ser	Glu	Leu	Asn	Glu	Arg	Met	Ala	Glu	Leu	Arg	Ala	Gln	Lys	Gln
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Lys	Val	Ser	Arg	Gln	Leu	Arg	Asp	Lys	Glu	Glu	Glu	Met	Glu	Val	Ala
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Thr	Gln	Lys	Val	Asp	Ala	Met	Arg	Gln	Glu	Met	Arg	Arg	Ala	Glu	Lys
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Leu	Arg	Lys	Glu	Leu	Glu	Ala	Gln	Leu	Asp	Asp	Ala	Val	Ala	Glu	Ala
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Ser	Lys	Glu	Arg	Lys	Leu	Arg	Glu	His	Ser	Glu	Asn	Phe	Cys	Lys	Gln
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Met	Glu	Ser	Glu	Leu	Glu	Ala	Leu	Lys	Val	Lys	Gln	Gly	Gly	Arg	Gly
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Ala	Gly	Ala	Thr	Leu	Glu	His	Gln	Gln	Glu	Ile	Ser	Lys	Ile	Lys	Ser
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Glu	Leu	Glu	Lys	Lys	Val	Leu	Phe	Tyr	Glu	Glu	Glu	Leu	Val	Arg	Arg
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Glu	Ala	Ser	His	Val	Leu	Glu	Val	Lys	Asn	Val	Lys	Lys	Glu	Val	His
705					710					715					720
Asp	Ser	Glu	Ser	His	Gln	Leu	Ala	Leu	Gln	Lys	Glu	Ile	Leu	Met	Leu
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Lys	Asp	Lys	Leu	Glu	Lys	Ser	Lys	Arg	Glu	Arg	His	Asn	Glu	Met	Glu
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Gln	Ile	Ala	Glu	Ile	Ile	Gln	Trp	Val	Ser	Asp	Glu	Lys	Asp	Ala	Arg
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Ser	Ala	Leu	Glu	Ala	Glu	Ile	Arg	Ala	Lys	Gln	Leu	Val	Gln	Glu	Glu
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Lys	Lys	Lys	Met	Glu	Glu	Lys	Phe	Arg	Ala	Asp	Thr	Gly	Leu	Lys	Leu
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Pro	Asp	Phe	Gln	Asp	Ser	Ile	Phe	Glu	Tyr	Phe	Asn	Thr	Ala	Pro	Leu
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Ala	His	Asp	Leu	Thr	Phe	Arg	Thr	Ser	Ser	Ala	Ser	Glu	Gln	Glu	Thr
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Gln	Ala	Pro	Lys	Pro	Glu	Ala	Ser	Pro	Ser	Met	Ser	Val	Ala	Ala	Ser
				980				985					990		
Glu	Gln	Gln	Glu	Asp	Met	Ala	Arg	Pro	Pro	Gln	Arg	Pro	Ser	Ala	Val
				995			1000					1005			
Pro	Leu	Pro	Thr	Thr	Gln	Ala	Leu	Val	Leu	Ala	Gly	Pro	Lys	Pro	Lys
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Ala	His	Gln	Phe	Ser	Ile	Lys	Ser	Phe	Ser	Ser	Pro	Thr	Gln	Cys	Ser
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His	Cys	Thr	Ser	Leu	Met	Val	Gly	Leu	Ile	Arg	Gln	Gly	Tyr	Ala	Cys
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Glu	Val	Cys	Ser	Phe	Ala	Cys	His	Val	Ser	Cys	Lys	Asp	Gly	Ala	Pro
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Gln	Val	Cys	Pro	Ile	Pro	Pro	Glu	Gln	Ser	Lys	Arg	Pro	Leu	Gly	Val
				1075			1080					1085			
Asp	Val	Gln	Arg	Gly	Ile	Gly	Thr	Ala	Tyr	Lys	Gly	His	Val	Lys	Val
				1090			1095				1100				
Pro	Lys	Pro	Thr	Gly	Val	Lys	Lys	Gly	Trp	Gln	Arg	Ala	Tyr	Ala	Val
1105					1110					1115					1120
Val	Cys	Glu	Cys	Lys	Leu	Phe	Leu	Tyr	Asp	Leu	Pro	Glu	Gly	Lys	Ser
				1125					1130					1135	

Val	His	Gln	Ile	Glu	Leu	Ala	Pro	Arg	Glu	Lys	Ile	Val	Ile	Leu	Leu	1285	1290	1295
Cys	Gly	Arg	Asn	His	His	Val	His	Leu	Tyr	Pro	Trp	Ser	Ser	Leu	Asp	1300	1305	1310
Gly	Ala	Glu	Gly	Ser	Phe	Asp	Ile	Lys	Leu	Pro	Glu	Thr	Lys	Gly	Cys	1315	1320	1325
Gln	Leu	Met	Ala	Thr	Ala	Thr	Leu	Lys	Arg	Asn	Ser	Gly	Thr	Cys	Leu	1330	1335	1340
Phe	Val	Ala	Val	Lys	Arg	Leu	Ile	Leu	Cys	Tyr	Glu	Ile	Gln	Arg	Thr	1345	1350	1355
Lys	Pro	Phe	His	Arg	Lys	Phe	Asn	Glu	Ile	Val	Ala	Pro	Gly	Ser	Val	1365	1370	1375
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Gly	Phe	Cys	Leu	Leu	Ser	Ile	Gln	Gly	Asp	Gly	Gln	Pro	Leu	Asn	Leu	1395	1400	1405
Val	Asn	Pro	Asn	Asp	Pro	Ser	Leu	Ala	Phe	Leu	Ser	Gln	Gln	Ser	Phe	1410	1415	1420
Asp	Ala	Leu	Cys	Ala	Val	Glu	Leu	Glu	Ser	Glu	Glu	Tyr	Leu	Leu	Cys	1425	1430	1435
Phe	Ser	His	Met	Gly	Leu	Tyr	Val	Asp	Pro	Gln	Gly	Arg	Arg	Ala	Arg	1445	1450	1455
Ala	Gln	Glu	Leu	Met	Trp	Pro	Ala	Ala	Pro	Val	Ala	Cys	Ser	Cys	Ser	1460	1465	1470
Pro	Thr	His	Val	Thr	Val	Tyr	Ser	Glu	Tyr	Gly	Val	Asp	Val	Phe	Asp	1475	1480	1485
Val	Arg	Thr	Met	Glu	Trp	Val	Gln	Thr	Ile	Gly	Leu	Arg	Arg	Ile	Arg	1490	1495	1500
Pro	Leu	Asn	Ser	Glu	Gly	Thr	Leu	Asn	Leu	Leu	Asn	Cys	Glu	Pro	Pro	1505	1510	1515
Arg	Leu	Ile	Tyr	Phe	Lys	Ser	Lys	Phe	Ser	Gly	Ala	Val	Leu	Asn	Val	1525	1530	1535
Pro	Asp	Thr	Ser	Asp	Asn	Ser	Lys	Lys	Gln	Met	Leu	Arg	Thr	Arg	Ser	1540	1545	1550
Lys	Arg	Arg	Phe	Val	Phe	Lys	Val	Pro	Glu	Glu	Glu	Arg	Leu	Gln	Gln	1555	1560	1565
Arg	Arg	Glu	Met	Leu	Arg	Asp	Pro	Glu	Leu	Arg	Ser	Lys	Met	Ile	Ser	1570	1575	1580
Asn	Pro	Thr	Asn	Phe	Asn	His	Val	Ala	His	Met	Gly	Pro	Gly	Asp	Gly	1585	1590	1595
Met	Gln	Val	Leu	Met	Asp	Leu	Pro	Leu	Ser	Ala	Val	Pro	Pro	Ser	Gln	1605	1610	1615
Glu	Glu	Arg	Pro	Gly	Pro	Ala	Pro	Thr	Asn	Leu	Ala	Arg	Gln	Pro	Pro	1620	1625	1630
Ser	Arg	Asn	Lys	Pro	Tyr	Ile	Ser	Trp	Pro	Ser	Ser	Gly	Gly	Ser	Glu	1635	1640	1645
Pro	Ser	Val	Thr	Val	Pro	Leu	Arg	Ser	Met	Ser	Asp	Pro	Asp	Gln	Asp	1650	1655	1660
Phe	Asp	Lys	Glu	Pro	Asp	Ser	Asp	Ser	Thr	Lys	His	Ser	Thr	Pro	Ser	1665	1670	1675
Asn	Ser	Ser	Asn	Pro	Ser	Gly	Pro	Pro	Ser	Pro	Asn	Ser	Pro	His	Arg	1685	1690	1695
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<211> 2699

<212> DNA

<213> Homo Sapiens

<220>

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<400> 73

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ctgaacgggg cgccgttctg ctgggagggc ggcgaggcca gcgaggcgct gctgctcttc 180
atg ggc ctc acc tac ctg ggc tcg ccg ttc gga ggc tgg ctg gcc gac 228
Met Gly Leu Thr Tyr Leu Gly Ser Pro Phe Gly Gly Trp Leu Ala Asp
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gcg cgg ctg ggc cgg gcg cgc gcc atc ctg ctg agc ctg gcg ctc tac 276
Ala Arg Leu Gly Arg Ala Arg Ala Ile Leu Leu Ser Leu Ala Leu Tyr
          20           25           30

ctg ctg ggc atg ctg gcc ttc ccg ctg ctg gcc gcg ccc gcc acg cga 324
Leu Leu Gly Met Leu Ala Phe Pro Leu Leu Ala Ala Pro Ala Thr Arg
          35           40           45

gcc gcg ctc tgc ggt tcc gcg cgc ctg ctc aac tgc acg gcg cct ggt 372
Ala Ala Leu Cys Gly Ser Ala Arg Leu Leu Asn Cys Thr Ala Pro Gly
          50           55           60

ccc gac gcc gcc gcc cgc tgc tgc tca ccg gcc acc ttc gcg ggg ctg 420
Pro Asp Ala Ala Ala Arg Cys Cys Ser Pro Ala Thr Phe Ala Gly Leu
          65           70           75           80

gtg ctg gtg ggc ctg ggc gtg gcc acc gtc aag gcc aac atc acg ccc 468
Val Leu Val Gly Leu Gly Val Ala Thr Val Lys Ala Asn Ile Thr Pro
          85           90           95

ttc ggc gcc gac cag gtt aaa gat cga ggt ccg gaa gcc act agg aga 516
Phe Gly Ala Asp Gln Val Lys Asp Arg Gly Pro Glu Ala Thr Arg Arg
          100          105          110

ttt ttt aat tgg ttt tat tgg agc att aac ctg gga gcg atc ctg tcg 564
Phe Phe Asn Trp Phe Tyr Trp Ser Ile Asn Leu Gly Ala Ile Leu Ser
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tta ggt ggc att gcc tat att cag cag aac gty agc ttt gtc act ggt 612
Leu Gly Gly Ile Ala Tyr Ile Gln Gln Asn Xaa Ser Phe Val Thr Gly
          130          135          140

tat gcg atc ccc act gtc tgc gtc ggc ctt gct ttt gtg gcc ttc ctc 660
Tyr Ala Ile Pro Thr Val Cys Val Gly Leu Ala Phe Val Ala Phe Leu
          145          150          155          160

tgt ggc cag agc gtt ttc atc acc aag cct cct gat ggc agt gcc ttc 708
Cys Gly Gln Ser Val Phe Ile Thr Lys Pro Pro Asp Gly Ser Ala Phe
          165          170          175

acc gat atg ttc aag ata ctg acg tat tcc tgc tgt tcc cag aag cga 756
Thr Asp Met Phe Lys Ile Leu Thr Tyr Ser Cys Cys Ser Gln Lys Arg
          180          185          190

agt gga gag cgc cag agt aat ggt gaa ggc att gga gtc ttt cag caa 804
Ser Gly Glu Arg Gln Ser Asn Gly Glu Gly Ile Gly Val Phe Gln Gln
          195          200          205

tct tct aaa caa agt ctg ttt gat tca tgt aag atg tct cat ggt ggg 852
Ser Ser Lys Gln Ser Leu Phe Asp Ser Cys Lys Met Ser His Gly Gly
          210          215          220

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Pro Phe Thr Glu Glu Lys Val Glu Asp Val Lys Ala Leu Val Lys Ile	
225 230 235 240	
gtc cct gtt ttc ttg gct ttg ata cct tac tgg aca gtg tat ttc caa	948
Val Pro Val Phe Leu Ala Leu Ile Pro Tyr Trp Thr Val Tyr Phe Gln	
245 250 255	
atg cag aca aca tat gtt tta cag agt ctt cat ttg agg att cca gaa	996
Met Gln Thr Thr Tyr Val Leu Gln Ser Leu His Leu Arg Ile Pro Glu	
260 265 270	
att tca aat att aca acc act cct cac acg ctc cct gca gcc tgg ctg	1044
Ile Ser Asn Ile Thr Thr Thr Pro His Thr Leu Pro Ala Ala Trp Leu	
275 280 285	
acc atg ttt gat gct gtg ctc atc ctc ctg ctc atc cct ctg aag gac	1092
Thr Met Phe Asp Ala Val Leu Ile Leu Leu Leu Ile Pro Leu Lys Asp	
290 295 300	
aaa ctg gtc gat ccc att ttg aga aga cat ggc ctg ctc cca tcc tcc	1140
Lys Leu Val Asp Pro Ile Leu Arg Arg His Gly Leu Leu Pro Ser Ser	
305 310 315 320	
ctg aag agg atc gcc gtg ggc atg ttc ttt gtc atg tgc tcg gcc ttt	1188
Leu Lys Arg Ile Ala Val Gly Met Phe Phe Val Met Cys Ser Ala Phe	
325 330 335	
gct gca gga att ttg gag agt aaa agg ctg aac ctt gtt aaa gag aaa	1236
Ala Ala Gly Ile Leu Glu Ser Lys Arg Leu Asn Leu Val Lys Glu Lys	
340 345 350	
acc att aat cag acc atc ggc aac gtc gtc tac cat gct gcc gat ctg	1284
Thr Ile Asn Gln Thr Ile Gly Asn Val Val Tyr His Ala Ala Asp Leu	
355 360 365	
tcg ctg tgg tgg cag gtg ccg cag tac ttg ctg att ggg atc agc gag	1332
Ser Leu Trp Trp Gln Val Pro Gln Tyr Leu Leu Ile Gly Ile Ser Glu	
370 375 380	
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Ile Phe Ala Ser Ile Ala Gly Leu Glu Phe Ala Tyr Ser Ala Ala Pro	
385 390 395 400	
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Lys Ser Met Gln Ser Ala Ile Met Gly Leu Phe Phe Phe Phe Ser Gly	
405 410 415	
gtc ggg tcg ttc gtg ggt tct gga ctg ctg gca ctg gtg tct atc aaa	1476
Val Gly Ser Phe Val Gly Ser Gly Leu Leu Ala Leu Val Ser Ile Lys	
420 425 430	
gcc atc gga tgg atg agc agt cac aca gac ttt ggt aat att aac ggc	1524
Ala Ile Gly Trp Met Ser Ser His Thr Asp Phe Gly Asn Ile Asn Gly	
435 440 445	
tgc tat ttg aac tat tac ttt ttc ctt ctg gct gct att caa gga gct	1572
Cys Tyr Leu Asn Tyr Tyr Phe Phe Leu Leu Ala Ala Ile Gln Gly Ala	
450 455 460	
acc ctc ctg ctt ttc ctc att att tct gtg aaa tat gac cat cat cga	1620



Thr Leu Leu Leu Phe Leu Ile Ile Ser Val Lys Tyr Asp His His Arg  
 465 470 475 480

gac cat cag cga tca aga gcc aat ggc gtg ccc acc agc agg agg gcc 1668  
 Asp His Gln Arg Ser Arg Ala Asn Gly Val Pro Thr Ser Arg Arg Ala  
 485 490 495

tga ccttcctgag gccatgtgcg gtttctgagg ctgacatgtc agtaactgac 1721  
 \*

tgggggtgcac tgagaacagg caagacttta aattcccata aaatgtctga cttcactgaa 1781  
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 Leu Leu Gly Met Leu Ala Phe Pro Leu Leu Ala Ala Pro Ala Thr Arg  
 35 40 45  
 Ala Ala Leu Cys Gly Ser Ala Arg Leu Leu Asn Cys Thr Ala Pro Gly  
 50 55 60  
 Pro Asp Ala Ala Ala Arg Cys Cys Ser Pro Ala Thr Phe Ala Gly Leu  
 65 70 75 80  
 Val Leu Val Gly Leu Gly Val Ala Thr Val Lys Ala Asn Ile Thr Pro  
 85 90 95  
 Phe Gly Ala Asp Gln Val Lys Asp Arg Gly Pro Glu Ala Thr Arg Arg  
 100 105 110  
 Phe Phe Asn Trp Phe Tyr Trp Ser Ile Asn Leu Gly Ala Ile Leu Ser  
 115 120 125  
 Leu Gly Gly Ile Ala Tyr Ile Gln Gln Asn Xaa Ser Phe Val Thr Gly  
 130 135 140  
 Tyr Ala Ile Pro Thr Val Cys Val Gly Leu Ala Phe Val Ala Phe Leu  
 145 150 155 160  
 Cys Gly Gln Ser Val Phe Ile Thr Lys Pro Pro Asp Gly Ser Ala Phe  
 165 170 175

Thr	Asp	Met	Phe	Lys	Ile	Leu	Thr	Tyr	Ser	Cys	Cys	Ser	Gln	Lys	Arg	
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Ser	Gly	Glu	Arg	Gln	Ser	Asn	Gly	Glu	Gly	Ile	Gly	Val	Phe	Gln	Gln	
		195					200					205				
Ser	Ser	Lys	Gln	Ser	Leu	Phe	Asp	Ser	Cys	Lys	Met	Ser	His	Gly	Gly	
	210					215					220					
Pro	Phe	Thr	Glu	Glu	Lys	Val	Glu	Asp	Val	Lys	Ala	Leu	Val	Lys	Ile	
225					230					235					240	
Val	Pro	Val	Phe	Leu	Ala	Leu	Ile	Pro	Tyr	Trp	Thr	Val	Tyr	Phe	Gln	
			245						250					255		
Met	Gln	Thr	Thr	Tyr	Val	Leu	Gln	Ser	Leu	His	Leu	Arg	Ile	Pro	Glu	
		260						265					270			
Ile	Ser	Asn	Ile	Thr	Thr	Thr	Pro	His	Thr	Leu	Pro	Ala	Ala	Trp	Leu	
		275					280					285				
Thr	Met	Phe	Asp	Ala	Val	Leu	Ile	Leu	Leu	Leu	Ile	Pro	Leu	Lys	Asp	
	290					295					300					
Lys	Leu	Val	Asp	Pro	Ile	Leu	Arg	Arg	His	Gly	Leu	Leu	Pro	Ser	Ser	
305					310					315					320	
Leu	Lys	Arg	Ile	Ala	Val	Gly	Met	Phe	Phe	Val	Met	Cys	Ser	Ala	Phe	
			325						330					335		
Ala	Ala	Gly	Ile	Leu	Glu	Ser	Lys	Arg	Leu	Asn	Leu	Val	Lys	Glu	Lys	
		340						345					350			
Thr	Ile	Asn	Gln	Thr	Ile	Gly	Asn	Val	Val	Tyr	His	Ala	Ala	Asp	Leu	
		355					360					365				
Ser	Leu	Trp	Trp	Gln	Val	Pro	Gln	Tyr	Leu	Leu	Ile	Gly	Ile	Ser	Glu	
	370					375					380					
Ile	Phe	Ala	Ser	Ile	Ala	Gly	Leu	Glu	Phe	Ala	Tyr	Ser	Ala	Ala	Pro	
385					390					395					400	
Lys	Ser	Met	Gln	Ser	Ala	Ile	Met	Gly	Leu	Phe	Phe	Phe	Phe	Ser	Gly	
			405						410					415		
Val	Gly	Ser	Phe	Val	Gly	Ser	Gly	Leu	Leu	Ala	Leu	Val	Ser	Ile	Lys	
		420						425					430			
Ala	Ile	Gly	Trp	Met	Ser	Ser	His	Thr	Asp	Phe	Gly	Asn	Ile	Asn	Gly	
		435					440					445				
Cys	Tyr	Leu	Asn	Tyr	Tyr	Phe	Phe	Leu	Leu	Ala	Ala	Ile	Gln	Gly	Ala	
	450					455					460					
Thr	Leu	Leu	Leu	Phe	Leu	Ile	Ile	Ser	Val	Lys	Tyr	Asp	His	His	Arg	
465					470					475					480	
Asp	His	Gln	Arg	Ser	Arg	Ala	Asn	Gly	Val	Pro	Thr	Ser	Arg	Arg	Ala	
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 <212> DNA  
 <213> Homo Sapiens

<220>  
 <221> CDS  
 <222> (1)...(1335)

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Met	Ile	Glu	Asp	Asn	Lys	Glu	Asn	Lys	Asp	His	Ser	Leu	Glu	Arg	Gly	
1				5					10					15		
aga	gcg	act	ctc	att	ttt	tcc	tta	aag	aat	gaa	gtt	gga	gga	ctt	ata	96
Arg	Ala	Thr	Leu	Ile	Phe	Ser	Leu	Lys	Asn	Glu	Val	Gly	Gly	Leu	Ile	
			20					25					30			
aaa	gca	ctg	aaa	atc	ttc	cag	gag	aaa	cat	gtg	aac	ctg	tta	cat	att	144
Lys	Ala	Leu	Lys	Ile	Phe	Gln	Glu	Lys	His	Val	Asn	Leu	Leu	His	Ile	

35					40					45							
gag	tcc	cga	aaa	tct	aag	aga	aga	aac	tca	gaa	ttt	gag	att	ttt	gtt	192	
Glu	Ser	Arg	Lys	Ser	Lys	Arg	Arg	Asn	Ser	Glu	Phe	Glu	Ile	Phe	Val		
50					55					60							
gac	tgt	gat	acc	aac	aga	gaa	caa	ttg	aat	gat	att	ttt	cat	ctt	ctg	240	
Asp	Cys	Asp	Thr	Asn	Arg	Glu	Gln	Leu	Asn	Asp	Ile	Phe	His	Leu	Leu		
65					70					75					80		
aag	tct	cat	acc	aat	gtt	ctt	tct	gtg	act	cca	cca	gat	aat	ttt	act	288	
Lys	Ser	His	Thr	Asn	Val	Leu	Ser	Val	Thr	Pro	Pro	Asp	Asn	Phe	Thr		
85					90					95							
atg	aag	gaa	gaa	ggc	atg	gag	agt	gtt	cct	tgg	ttt	cca	aag	aaa	att	336	
Met	Lys	Glu	Glu	Gly	Met	Glu	Ser	Val	Pro	Trp	Phe	Pro	Lys	Lys	Ile		
100					105					110							
tca	gac	ctg	gac	cat	tgt	gct	aac	cga	gtt	ctg	atg	tat	gga	tct	gag	384	
Ser	Asp	Leu	Asp	His	Cys	Ala	Asn	Arg	Val	Leu	Met	Tyr	Gly	Ser	Glu		
115					120					125							
cta	gat	gca	gac	cac	cct	ggc	ttc	aaa	gac	aat	gtc	tac	cgt	aaa	aga	432	
Leu	Asp	Ala	Asp	His	Pro	Gly	Phe	Lys	Asp	Asn	Val	Tyr	Arg	Lys	Arg		
130					135					140							
cga	aag	tac	ttt	gca	gac	tcg	gct	atg	agc	tat	aaa	tat	gga	gac	ccc	480	
Arg	Lys	Tyr	Phe	Ala	Asp	Ser	Ala	Met	Ser	Tyr	Lys	Tyr	Gly	Asp	Pro		
145					150					155					160		
att	cct	aag	gtt	gaa	ttc	acg	gaa	gag	gag	att	aag	acc	tgg	gga	acc	528	
Ile	Pro	Lys	Val	Glu	Phe	Thr	Glu	Glu	Glu	Ile	Lys	Thr	Trp	Gly	Thr		
165					170					175							
gta	ttc	cgg	gag	ctc	aac	aaa	ctc	tat	ccg	acc	cat	gct	tgc	aga	gag	576	
Val	Phe	Arg	Glu	Leu	Asn	Lys	Leu	Tyr	Pro	Thr	His	Ala	Cys	Arg	Glu		
180					185					190							
tat	ctc	aaa	aat	tta	cct	ctg	ctt	tcc	aag	tat	tgt	gga	tat	cag	gaa	624	
Tyr	Leu	Lys	Asn	Leu	Pro	Leu	Leu	Ser	Lys	Tyr	Cys	Gly	Tyr	Gln	Glu		
195					200					205							
gac	aat	atc	cca	cag	ctg	gaa	gat	att	tca	aac	ttt	tta	aaa	gag	cgc	672	
Asp	Asn	Ile	Pro	Gln	Leu	Glu	Asp	Ile	Ser	Asn	Phe	Leu	Lys	Glu	Arg		
210					215					220							
aca	ggt	ttt	tcc	att	cgt	cct	gtg	gct	ggt	tac	tta	tca	cca	aga	gat	720	
Thr	Gly	Phe	Ser	Ile	Arg	Pro	Val	Ala	Gly	Tyr	Leu	Ser	Pro	Arg	Asp		
225					230					235					240		
ttc	tta	tca	ggt	tta	gcc	ttt	cga	gtt	ttt	cac	tgc	act	caa	tat	gtg	768	
Phe	Leu	Ser	Gly	Leu	Ala	Phe	Arg	Val	Phe	His	Cys	Thr	Gln	Tyr	Val		
245					250					255							
aga	cac	agt	tca	gac	ccc	ttc	tat	acc	cca	gag	ccg	gat	acc	tgc	cat	816	
Arg	His	Ser	Ser	Asp	Pro	Phe	Tyr	Thr	Pro	Glu	Pro	Asp	Thr	Cys	His		
260					265					270							
gaa	ctc	tta	ggt	cac	gtt	ccc	ctt	ttg	gct	gag	cca	agt	ttt	gct	cag	864	
Glu	Leu	Leu	Gly	His	Val	Pro	Leu	Leu	Ala	Glu	Pro	Ser	Phe	Ala	Gln		
275					280					285							

ttc tcc caa gaa att ggc ctg gct tcc ctt gga gct tca gag gag gct	912
Phe Ser Gln Glu Ile Gly Leu Ala Ser Leu Gly Ala Ser Glu Glu Ala	
290 295 300	
ggt caa aaa ctg gca acg tgc tac ttt ttc act gtg gag ttt ggt cta	960
Val Gln Lys Leu Ala Thr Cys Tyr Phe Phe Thr Val Glu Phe Gly Leu	
305 310 315 320	
tgt aaa caa gac gga cag tta cga gtc ttc ggc gct ggc tta ctt tct	1008
Cys Lys Gln Asp Gly Gln Leu Arg Val Phe Gly Ala Gly Leu Leu Ser	
325 330 335	
tct atc agt gaa ctc aaa cat gtg ctt tct gga cat gcc aaa gta aag	1056
Ser Ile Ser Glu Leu Lys His Val Leu Ser Gly His Ala Lys Val Lys	
340 345 350	
cct ttt gat ccc aag att acc tgc aaa caa gaa tgc ctc atc aca act	1104
Pro Phe Asp Pro Lys Ile Thr Cys Lys Gln Glu Cys Leu Ile Thr Thr	
355 360 365	
ttt cag gat gtc tac ttt gta tct gaa agt ttt gaa gat gca aag gag	1152
Phe Gln Asp Val Tyr Phe Val Ser Glu Ser Phe Glu Asp Ala Lys Glu	
370 375 380	
aag atg aga gaa ttt acc aaa aca att aag cgt ccc ttt gga gtg aaa	1200
Lys Met Arg Glu Phe Thr Lys Thr Ile Lys Arg Pro Phe Gly Val Lys	
385 390 395 400	
tat aat ccc tac aca cga agc att cag atc ctg aaa gac gcc aaa agc	1248
Tyr Asn Pro Tyr Thr Arg Ser Ile Gln Ile Leu Lys Asp Ala Lys Ser	
405 410 415	
ata acg aat gcc atg aac gag ctg cgg cat gat ctt gac gtt gtc agc	1296
Ile Thr Asn Ala Met Asn Glu Leu Arg His Asp Leu Asp Val Val Ser	
420 425 430	
gac gcc ctt ggg aag gtc agc agg aag ccg agt atc taa	1335
Asp Ala Leu Gly Lys Val Ser Arg Lys Pro Ser Ile *	
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<210> 76

<211> 444

<212> PRT

<213> Homo Sapiens

<400> 76

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Lys Ala Leu Lys Ile Phe Gln Glu Lys His Val Asn Leu Leu His Ile	
35 40 45	
Glu Ser Arg Lys Ser Lys Arg Arg Asn Ser Glu Phe Glu Ile Phe Val	
50 55 60	
Asp Cys Asp Thr Asn Arg Glu Gln Leu Asn Asp Ile Phe His Leu Leu	
65 70 75 80	
Lys Ser His Thr Asn Val Leu Ser Val Thr Pro Pro Asp Asn Phe Thr	
85 90 95	
Met Lys Glu Glu Gly Met Glu Ser Val Pro Trp Phe Pro Lys Lys Ile	
100 105 110	
Ser Asp Leu Asp His Cys Ala Asn Arg Val Leu Met Tyr Gly Ser Glu	

115	120	125
Leu Asp Ala Asp His Pro Gly Phe Lys Asp Asn Val Tyr Arg Lys Arg		
130	135	140
Arg Lys Tyr Phe Ala Asp Ser Ala Met Ser Tyr Lys Tyr Gly Asp Pro		
145	150	155
Ile Pro Lys Val Glu Phe Thr Glu Glu Glu Ile Lys Thr Trp Gly Thr		
165	170	175
Val Phe Arg Glu Leu Asn Lys Leu Tyr Pro Thr His Ala Cys Arg Glu		
180	185	190
Tyr Leu Lys Asn Leu Pro Leu Leu Ser Lys Tyr Cys Gly Tyr Gln Glu		
195	200	205
Asp Asn Ile Pro Gln Leu Glu Asp Ile Ser Asn Phe Leu Lys Glu Arg		
210	215	220
Thr Gly Phe Ser Ile Arg Pro Val Ala Gly Tyr Leu Ser Pro Arg Asp		
225	230	235
Phe Leu Ser Gly Leu Ala Phe Arg Val Phe His Cys Thr Gln Tyr Val		
245	250	255
Arg His Ser Ser Asp Pro Phe Tyr Thr Pro Glu Pro Asp Thr Cys His		
260	265	270
Glu Leu Leu Gly His Val Pro Leu Leu Ala Glu Pro Ser Phe Ala Gln		
275	280	285
Phe Ser Gln Glu Ile Gly Leu Ala Ser Leu Gly Ala Ser Glu Glu Ala		
290	295	300
Val Gln Lys Leu Ala Thr Cys Tyr Phe Phe Thr Val Glu Phe Gly Leu		
305	310	315
Cys Lys Gln Asp Gly Gln Leu Arg Val Phe Gly Ala Gly Leu Leu Ser		
325	330	335
Ser Ile Ser Glu Leu Lys His Val Leu Ser Gly His Ala Lys Val Lys		
340	345	350
Pro Phe Asp Pro Lys Ile Thr Cys Lys Gln Glu Cys Leu Ile Thr Thr		
355	360	365
Phe Gln Asp Val Tyr Phe Val Ser Glu Ser Phe Glu Asp Ala Lys Glu		
370	375	380
Lys Met Arg Glu Phe Thr Lys Thr Ile Lys Arg Pro Phe Gly Val Lys		
385	390	395
Tyr Asn Pro Tyr Thr Arg Ser Ile Gln Ile Leu Lys Asp Ala Lys Ser		
405	410	415
Ile Thr Asn Ala Met Asn Glu Leu Arg His Asp Leu Asp Val Val Ser		
420	425	430
Asp Ala Leu Gly Lys Val Ser Arg Lys Pro Ser Ile		
435	440	

<210> 77

<211> 2534

<212> DNA

<213> Homo Sapiens

<220>

<221> CDS

<222> (118)...(1230)

<400> 77

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Met  
1

gag ccc ctc ttc ccc gcg ccg ttc tgg gag gtt atc tac ggc agc cac	168
Glu Pro Leu Phe Pro Ala Pro Phe Trp Glu Val Ile Tyr Gly Ser His	
5	10
	15

ctt	cag	ggc	aac	ctg	tcc	ctc	ctg	agc	ccc	aac	cac	agt	ctg	ctg	ccc	216
Leu	Gln	Gly	Asn	Leu	Ser	Leu	Leu	Ser	Pro	Asn	His	Ser	Leu	Leu	Pro	
		20					25					30				
ccg	cat	ctg	ctg	ctc	aat	gcc	agc	cac	ggc	gcc	ttc	ctg	ccc	ctc	ggg	264
Pro	His	Leu	Leu	Leu	Asn	Ala	Ser	His	Gly	Ala	Phe	Leu	Pro	Leu	Gly	
	35					40					45					
ctc	aag	gtc	acc	atc	gtg	ggg	ctc	tac	ctg	gcc	gtg	tgt	gtc	gga	ggg	312
Leu	Lys	Val	Thr	Ile	Val	Gly	Leu	Tyr	Leu	Ala	Val	Cys	Val	Gly	Gly	
	50				55					60					65	
ctc	ctg	ggg	aac	tgc	ctt	gtc	atg	tac	gtc	atc	ctc	agg	cac	acc	aaa	360
Leu	Leu	Gly	Asn	Cys	Leu	Val	Met	Tyr	Val	Ile	Leu	Arg	His	Thr	Lys	
			70						75					80		
atg	aag	aca	gcc	acc	aat	att	tac	atc	ttt	aac	ctg	gcc	ctg	gcc	gac	408
Met	Lys	Thr	Ala	Thr	Asn	Ile	Tyr	Ile	Phe	Asn	Leu	Ala	Leu	Ala	Asp	
			85					90					95			
act	ctg	gtc	ctg	ctg	acg	ctg	ccc	ttc	cag	ggc	acg	gac	atc	ctc	ctg	456
Thr	Leu	Val	Leu	Leu	Thr	Leu	Pro	Phe	Gln	Gly	Thr	Asp	Ile	Leu	Leu	
		100					105					110				
ggc	ttc	tgg	ccg	ttt	ggg	aat	gcg	ctg	tgc	aag	aca	gtc	att	gcc	att	504
Gly	Phe	Trp	Pro	Phe	Gly	Asn	Ala	Leu	Cys	Lys	Thr	Val	Ile	Ala	Ile	
	115					120					125					
gac	tac	tac	aac	atg	ttc	acc	agc	acc	ttc	acc	cta	act	gcc	atg	agt	552
Asp	Tyr	Tyr	Asn	Met	Phe	Thr	Ser	Thr	Phe	Thr	Leu	Thr	Ala	Met	Ser	
	130				135					140					145	
gtg	gat	cgc	tat	gta	gcc	atc	tgc	cac	ccc	atc	cgt	gcc	ctc	gac	gtc	600
Val	Asp	Arg	Tyr	Val	Ala	Ile	Cys	His	Pro	Ile	Arg	Ala	Leu	Asp	Val	
				150					155					160		
cgc	acg	tcc	agc	aaa	gcc	cag	gct	gtc	aat	gtg	gcc	atc	tgg	gcc	ctg	648
Arg	Thr	Ser	Ser	Lys	Ala	Gln	Ala	Val	Asn	Val	Ala	Ile	Trp	Ala	Leu	
			165					170					175			
gcc	tct	gtt	gtc	ggt	gtt	ccc	gtt	gcc	atc	atg	ggc	tgc	gca	cag	gtc	696
Ala	Ser	Val	Val	Gly	Val	Pro	Val	Ala	Ile	Met	Gly	Ser	Ala	Gln	Val	
		180					185					190				
gag	gat	gaa	gag	atc	gag	tgc	ctg	gtg	gag	atc	cct	acc	cct	cag	gat	744
Glu	Asp	Glu	Glu	Ile	Glu	Cys	Leu	Val	Glu	Ile	Pro	Thr	Pro	Gln	Asp	
	195					200					205					
tac	tgg	ggc	ccg	gtg	ttt	gcc	atc	tgc	atc	ttc	ctc	ttc	tcc	ttc	atc	792
Tyr	Trp	Gly	Pro	Val	Phe	Ala	Ile	Cys	Ile	Phe	Leu	Phe	Ser	Phe	Ile	
	210				215					220					225	
gtc	ccc	gtg	ctc	gtc	atc	tct	gtc	tgc	tac	agc	ctc	atg	atc	cgg	cgg	840
Val	Pro	Val	Leu	Val	Ile	Ser	Val	Cys	Tyr	Ser	Leu	Met	Ile	Arg	Arg	
				230					235					240		
ctc	cgt	gga	gtc	cgc	ctg	ctc	tgc	ggc	tcc	cga	gag	aag	gac	cgg	aac	888
Leu	Arg	Gly	Val	Arg	Leu	Leu	Ser	Gly	Ser	Arg	Glu	Lys	Asp	Arg	Asn	
			245					250					255			
ctg	cgg	cgc	atc	act	cgg	ctg	gtg	ctg	gtg	gta	gtg	gct	gtg	ttc	gtg	936
Leu	Arg	Arg	Ile	Thr	Arg	Leu	Val	Leu	Val	Val	Val	Ala	Val	Phe	Val	

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ggc tgc tgg acg cct gtc cag gtc ttc gtg ctg gcc caa ggg ctg ggg			984
Gly Cys Trp Thr Pro Val Gln Val Phe Val Leu Ala Gln Gly Leu Gly			
275	280	285	
ggt cag ccg agc agc gag act gcc gtg gcc att ctg cgc ttc tgc acg			1032
Val Gln Pro Ser Ser Glu Thr Ala Val Ala Ile Leu Arg Phe Cys Thr			
290	295	300	305
gcc ctg ggc tac gtc aac agc tgc ctc aac ccc atc ctc tac gcc ttc			1080
Ala Leu Gly Tyr Val Asn Ser Cys Leu Asn Pro Ile Leu Tyr Ala Phe			
	310	315	320
ctg gat gag aac ttc aag gcc tgc ttc cgc aag ttc tgc tgt gca tct			1128
Leu Asp Glu Asn Phe Lys Ala Cys Phe Arg Lys Phe Cys Cys Ala Ser			
	325	330	335
gcc ctg cgc cgg gac gtg cag gtg tct gac cgc gtg cgc agc att gcc			1176
Ala Leu Arg Arg Asp Val Gln Val Ser Asp Arg Val Arg Ser Ile Ala			
	340	345	350
aag gac gtg gcc ctg gcc tgc aag acc tct gag acg gta ccg cgg ccc			1224
Lys Asp Val Ala Leu Ala Cys Lys Thr Ser Glu Thr Val Pro Arg Pro			
	355	360	365
gca tga ctaggcgtgg acctgcccac ggtgcctgtc agcccgacaga gcccacctac			1280
Ala *			
370			

gcccacacaca	gagctcacac	aggctactgc	tctctaggcg	gacacaccct	gggccctgag	1340
catccagagc	ctgggatggg	cttttccctg	tgggccaggg	atgctcggtc	ccagaggagg	1400
acctagtgac	atcatgggac	aggtaaagc	attaggggcca	cctccatggc	cccagacaga	1460
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 <212> PRT  
 <213> Homo Sapiens

<400> 78  
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 His Leu Gln Gly Asn Leu Ser Leu Leu Ser Pro Asn His Ser Leu Leu  
 20 25 30

Pro	Pro	His	Leu	Leu	Leu	Asn	Ala	Ser	His	Gly	Ala	Phe	Leu	Pro	Leu
		35					40					45			
Gly	Leu	Lys	Val	Thr	Ile	Val	Gly	Leu	Tyr	Leu	Ala	Val	Cys	Val	Gly
	50					55					60				
Gly	Leu	Leu	Gly	Asn	Cys	Leu	Val	Met	Tyr	Val	Ile	Leu	Arg	His	Thr
65				70						75				80	
Lys	Met	Lys	Thr	Ala	Thr	Asn	Ile	Tyr	Ile	Phe	Asn	Leu	Ala	Leu	Ala
			85						90					95	
Asp	Thr	Leu	Val	Leu	Leu	Thr	Leu	Pro	Phe	Gln	Gly	Thr	Asp	Ile	Leu
			100					105					110		
Leu	Gly	Phe	Trp	Pro	Phe	Gly	Asn	Ala	Leu	Cys	Lys	Thr	Val	Ile	Ala
		115					120					125			
Ile	Asp	Tyr	Tyr	Asn	Met	Phe	Thr	Ser	Thr	Phe	Thr	Leu	Thr	Ala	Met
	130					135					140				
Ser	Val	Asp	Arg	Tyr	Val	Ala	Ile	Cys	His	Pro	Ile	Arg	Ala	Leu	Asp
145					150					155				160	
Val	Arg	Thr	Ser	Ser	Lys	Ala	Gln	Ala	Val	Asn	Val	Ala	Ile	Trp	Ala
					165					170				175	
Leu	Ala	Ser	Val	Val	Gly	Val	Pro	Val	Ala	Ile	Met	Gly	Ser	Ala	Gln
			180					185					190		
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Lys Asp Tyr Ile Leu Glu Leu Lys Val Lys Glu Thr Ser Gln Val Thr
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ttg gtc cac act gag att ctg aag ctt ttc cca cag gct gca ggg cag 4786
Leu Val His Thr Glu Ile Leu Lys Leu Phe Pro Gln Ala Ala Gly Gln
1525 1530 1535

gaa agg tat tcc tct ttg tta acc tat aag ctg ccc gtg gca gac gtt 4834
Glu Arg Tyr Ser Ser Leu Leu Thr Tyr Lys Leu Pro Val Ala Asp Val
1540 1545 1550

tac cct cta tca cag acc ttt cac aaa tta gaa gca gtg aag cat aac 4882
Tyr Pro Leu Ser Gln Thr Phe His Lys Leu Glu Ala Val Lys His Asn
1555 1560 1565

ttt aac ctg gaa gaa tac agc ctt tct cag tgc aca ctg gag aag gta 4930
Phe Asn Leu Glu Glu Tyr Ser Leu Ser Gln Cys Thr Leu Glu Lys Val
1570 1575 1580 1585

ttc tta gag ctt tct aaa gaa cag gaa gta gga aat ttt gat gaa gaa 4978
Phe Leu Glu Leu Ser Lys Glu Gln Glu Val Gly Asn Phe Asp Glu Glu
1590 1595 1600

att gat aca aca atg aga tgg aaa ctc ctc cct cat tca gat gaa cct 5026
Ile Asp Thr Thr Met Arg Trp Lys Leu Leu Pro His Ser Asp Glu Pro
1605 1610 1615

taa aacctcaaac ctagtaattt tttgttgatc tcctataaac ttatgtttta 5079
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tgtaataatt aatagtatgt ttaatttttaa agatcattta aaattaacat caggatatatt 5139
ttgtaaattt agttaacaaa tacataaatt ttaaaattat tcttcctctc aaacataggg 5199
gtgatagcaa acctgtgata aaggcaatac aaaatattag taaagtcacc caaagagtca 5259
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<210> 80
<211> 1617
<212> PRT
<213> Homo Sapiens
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Cys Lys Asn Phe Leu Lys Lys Trp Arg Met Lys Arg Glu Ser Leu Leu
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Glu Trp Gly Leu Ser Ile Leu Leu Gly Leu Cys Ile Ala Leu Phe Ser
35 40 45
Ser Ser Met Arg Asn Val Gln Phe Pro Gly Met Ala Pro Gln Asn Leu
50 55 60
Gly Arg Val Asp Lys Phe Asn Ser Ser Ser Leu Met Val Val Tyr Thr
65 70 75 80
Pro Ile Ser Asn Leu Thr Gln Gln Ile Met Asn Lys Thr Ala Leu Ala
85 90 95
Pro Leu Leu Lys Gly Thr Ser Val Ile Gly Ala Pro Asn Lys Thr His
100 105 110
Met Asp Glu Ile Leu Leu Glu Asn Leu Pro Tyr Ala Met Gly Ile Ile
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		115					120					125				
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Ser	Pro	Leu	Trp	Lys	Glu	Asp	Phe	Ser	Ala	His	Cys	Trp	Asp	Gly	Tyr	
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Gly	Glu	Phe	Ser	Cys	Thr	Leu	Thr	Lys	Tyr	Trp	Asn	Arg	Gly	Phe	Val	
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Ala	Leu	Gln	Thr	Ala	Ile	Asn	Thr	Ala	Ile	Ile	Glu	Ile	Thr	Thr	Asn	
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His	Pro	Val	Met	Glu	Glu	Leu	Met	Ser	Val	Thr	Ala	Ile	Thr	Met	Lys	
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Thr	Leu	Pro	Phe	Ile	Thr	Lys	Asn	Leu	Leu	His	Asn	Glu	Met	Phe	Ile	
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Leu	Phe	Phe	Leu	Leu	His	Phe	Ser	Pro	Leu	Val	Tyr	Phe	Ile	Ser	Leu	
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Asn	Val	Thr	Lys	Glu	Arg	Lys	Lys	Ser	Lys	Asn	Leu	Met	Lys	Met	Met	
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Gly	Leu	Gln	Asp	Ser	Ala	Phe	Trp	Leu	Ser	Trp	Gly	Leu	Ile	Tyr	Ala	
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Gly	Phe	Ile	Phe	Ile	Ile	Ser	Ile	Phe	Ile	Thr	Ile	Ile	Ile	Thr	Phe	
		275					280					285				
Thr	Gln	Ile	Ile	Val	Met	Thr	Gly	Phe	Met	Val	Ile	Phe	Ile	Leu	Phe	
	290					295					300					
Phe	Leu	Tyr	Gly	Leu	Ser	Leu	Val	Ala	Leu	Val	Phe	Leu	Met	Ser	Val	
305					310					315					320	
Leu	Leu	Lys	Lys	Ala	Val	Leu	Thr	Asn	Leu	Val	Val	Phe	Leu	Leu	Thr	
				325					330					335		
Leu	Phe	Trp	Gly	Cys	Leu	Gly	Phe	Thr	Val	Phe	Tyr	Glu	Gln	Leu	Pro	
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Ser	Ser	Leu	Glu	Trp	Ile	Leu	Asn	Ile	Cys	Ser	Pro	Phe	Ala	Phe	Thr	
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Thr	Gly	Met	Ile	Gln	Ile	Ile	Lys	Leu	Asp	Tyr	Asn	Leu	Asn	Gly	Val	
	370					375					380					
Ile	Phe	Pro	Asp	Pro	Ser	Gly	Asp	Ser	Tyr	Thr	Met	Ile	Ala	Thr	Phe	
385					390					395					400	
Ser	Met	Leu	Leu	Leu	Asp	Gly	Leu	Ile	Tyr	Leu	Leu	Leu	Ala	Leu	Tyr	
				405					410					415		
Phe	Asp	Lys	Ile	Leu	Pro	Tyr	Gly	Asp	Glu	Arg	His	Tyr	Ser	Pro	Leu	
			420					425					430			
Phe	Phe	Leu	Asn	Ser	Ser	Ser	Cys	Phe	Gln	His	Gln	Arg	Thr	Asn	Ala	
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Lys	Val	Ile	Glu	Lys	Glu	Ile	Asp	Ala	Glu	His	Pro	Ser	Asp	Asp	Tyr	
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Phe	Glu	Pro	Val	Ala	Pro	Glu	Phe	Gln	Gly	Lys	Glu	Ala	Ile	Arg	Ile	
465					470					475</						



610	615	620
Phe Gly Ile Thr Ile Leu	Gly Asp Pro Gln Ile Leu	Leu Leu Asp Glu
625	630	635
Pro Thr Thr Gly Leu	Asp Pro Phe Ser Arg Asp	Gln Val Trp Ser Leu
645	650	655
Leu Arg Glu Arg Arg Ala	Asp His Val Ile Leu	Phe Ser Thr Gln Ser
660	665	670
Met Asp Glu Ala Asp Ile	Leu Ala Asp Arg Lys	Val Ile Met Ser Asn
675	680	685
Gly Arg Leu Lys Cys Ala	Gly Ser Ser Met Phe	Leu Lys Arg Arg Trp
690	695	700
Gly Leu Gly Tyr His Leu	Ser Leu His Arg Asn	Glu Ile Cys Asn Pro
705	710	715
Glu Gln Ile Thr Ser Phe	Ile Thr His His Ile	Pro Asp Ala Lys Leu
725	730	735
Lys Thr Glu Asn Lys Glu	Lys Leu Val Tyr Thr	Leu Pro Leu Glu Arg
740	745	750
Thr Asn Thr Phe Pro Asp	Leu Phe Ser Asp Leu	Asp Lys Cys Ser Asp
755	760	765
Gln Gly Val Thr Gly Tyr	Asp Ile Ser Met Ser	Thr Leu Asn Glu Val
770	775	780
Phe Met Lys Leu Glu Gly	Gln Ser Thr Ile Glu	Gln Asp Phe Glu Gln
785	790	795
Val Glu Met Ile Arg Asp	Ser Glu Ser Leu Asn	Glu Met Glu Leu Ala
805	810	815
His Ser Ser Phe Ser Glu	Met Gln Thr Ala Val	Ser Asp Met Gly Leu
820	825	830
Trp Arg Met Gln Val Phe	Ala Met Ala Arg Leu	Arg Phe Leu Lys Leu
835	840	845
Lys Arg Gln Thr Lys Val	Leu Thr Leu Leu Val	Phe Gly Ile
850	855	860
Ala Ile Phe Pro Leu Ile	Val Glu Asn Ile Ile	Tyr Ala Met Leu Asn
865	870	875
Glu Lys Ile Asp Trp Glu	Phe Lys Asn Glu Leu	Tyr Phe Leu Ser Pro
885	890	895
Gly Gln Leu Pro Gln Glu	Pro Arg Thr Ser Leu	Leu Ile Ile Asn Asn
900	905	910
Thr Glu Ser Asn Ile Glu	Asp Phe Ile Lys Ser	Leu Lys His Gln Asn
915	920	925
Ile Leu Leu Glu Val Asp	Asp Phe Glu Asn Arg	Asn Gly Thr Asp Gly
930	935	940
Leu Ser Tyr Asn Gly Ala	Ile Ile Val Ser Gly	Lys Gln Lys Asp Tyr
945	950	955
Arg Phe Ser Val Val Cys	Asn Thr Lys Arg Leu	His Cys Phe Pro Ile
965	970	975
Leu Met Asn Ile Ile Ser	Asn Gly Leu Leu Gln	Met Phe Asn His Thr
980	985	990
Gln His Ile Arg Ile Glu	Ser Ser Pro Phe Pro	Leu Ser His Ile Gly
995	1000	1005
Leu Trp Thr Gly Leu Pro	Asp Gly Ser Phe Phe	Leu Phe Leu Val Leu
1010	1015	1020
Cys Ser Ile Ser Pro Tyr	Ile Thr Met Gly Ser	Ile Ser Asp Tyr Lys
1025	1030	1035
Lys Asn Ala Lys Ser Gln	Leu Trp Ile Ser Gly	Leu Tyr Thr Ser Ala
1045	1050	1055
Tyr Trp Cys Gly Gln Ala	Leu Val Asp Val Ser	Phe Phe Ile Leu Ile
1060	1065	1070
Leu Leu Leu Met Tyr Leu	Ile Phe Tyr Ile Glu	Asn Met Gln Tyr Leu
1075	1080	1085
Leu Ile Thr Ser Gln Ile	Val Phe Ala Leu Val	Ile Val Thr Pro Gly
1090	1095	1100
Tyr Ala Ala Ser Leu Val	Phe Phe Ile Tyr Met	Ile Ser Phe Ile Phe

1105		1110		1115		1120
Arg Lys Arg Arg Lys Asn Ser Gly Leu Trp Ser Phe Tyr Phe Phe Phe						
	1125		1130			1135
Ala Ser Thr Ile Met Phe Ser Ile Thr Leu Ile Asn His Phe Asp Leu						
	1140		1145			1150
Ser Ile Leu Ile Thr Thr Met Val Leu Val Pro Ser Tyr Thr Leu Leu						
	1155		1160			1165
Gly Phe Lys Thr Phe Leu Glu Val Arg Asp Gln Glu His Tyr Arg Glu						
	1170		1175			1180
Phe Pro Glu Ala Asn Phe Glu Leu Ser Ala Thr Asp Phe Leu Val Cys						
1185		1190		1195		1200
Phe Ile Pro Tyr Phe Gln Thr Leu Leu Phe Val Phe Val Leu Arg Cys						
	1205		1210			1215
Met Glu Leu Lys Cys Gly Lys Lys Arg Met Arg Lys Asp Pro Val Phe						
	1220		1225			1230
Arg Ile Ser Pro Gln Ser Arg Asp Ala Lys Pro Asn Pro Glu Glu Pro						
	1235		1240			1245
Ile Asp Glu Asp Glu Asp Ile Gln Thr Glu Arg Ile Arg Thr Ala Thr						
	1250		1255			1260
Ala Leu Thr Thr Ser Ile Leu Asp Glu Lys Pro Val Ile Ile Ala Ser						
1265		1270		1275		1280
Cys Leu His Lys Glu Tyr Ala Gly Gln Lys Lys Ser Cys Phe Ser Lys						
	1285		1290			1295
Arg Lys Lys Lys Ile Ala Ala Arg Asn Ile Ser Phe Cys Val Gln Glu						
	1300		1305			1310
Gly Glu Ile Leu Gly Leu Leu Gly Pro Ser Gly Ala Gly Lys Ser Ser						
	1315		1320			1325
Ser Ile Arg Met Ile Ser Gly Ile Thr Lys Pro Thr Ala Gly Glu Val						
	1330		1335			1340
Glu Leu Lys Gly Cys Ser Ser Val Leu Gly His Leu Gly Tyr Cys Pro						
1345		1350		1355		1360
Gln Glu Asn Val Leu Trp Pro Met Leu Thr Leu Arg Glu His Leu Glu						
	1365		1370			1375
Val Tyr Ala Ala Val Lys Gly Leu Arg Lys Ala Asp Ala Arg Leu Ala						
	1380		1385			1390
Ile Ala Arg Leu Val Ser Ala Phe Lys Leu His Glu Gln Leu Asn Val						
	1395		1400			1405
Pro Val Gln Lys Leu Thr Ala Gly Ile Thr Arg Lys Leu Cys Phe Val						
	1410		1415			1420
Leu Ser Leu Leu Gly Asn Ser Pro Val Leu Leu Leu Asp Glu Pro Ser						
1425		1430		1435		1440
Thr Gly Ile Asp Pro Thr Gly Gln Gln Gln Met Trp Gln Ala Ile Gln						
	1445		1450			1455
Ala Val Val Lys Asn Thr Glu Arg Gly Val Leu Leu Thr Thr His Asn						
	1460		1465			1470
Leu Ala Glu Ala Glu Ala Leu Cys Asp Arg Val Ala Ile Met Val Ser						
	1475		1480			1485
Gly Arg Leu Arg Cys Ile Gly Ser Ile Gln His Leu Lys Asn Lys Leu						
	1490		1495			1500
Gly Lys Asp Tyr Ile Leu Glu Leu Lys Val Lys Glu Thr Ser Gln Val						
1505		1510		1515		1520
Thr Leu Val His Thr Glu Ile Leu Lys Leu Phe Pro Gln Ala Ala Gly						
	1525		1530			1535
Gln Glu Arg Tyr Ser Ser Leu Leu Thr Tyr Lys Leu Pro Val Ala Asp						
	1540		1545			1550
Val Tyr Pro Leu Ser Gln Thr Phe His Lys Leu Glu Ala Val Lys His						
	1555		1560			1565
Asn Phe Asn Leu Glu Glu Tyr Ser Leu Ser Gln Cys Thr Leu Glu Lys						
	1570		1575			1580
Val Phe Leu Glu Leu Ser Lys Glu Gln Glu Val Gly Asn Phe Asp Glu						
1585		1590		1595		1600
Glu Ile Asp Thr Thr Met Arg Trp Lys Leu Leu Pro His Ser Asp Glu						

Pro

1605 1610 1615

<210> 81  
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 <212> DNA  
 <213> Homo Sapiens

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 <221> CDS  
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 caccgtaagg ctaggccgcg agcttagtcc tgggagccgc ctccgtcgcc gccgtcagag 120  
 ccgcctatc agattatctt aacaagaaaa ccaactggaa aaaaaa atg aaa ttc 175  
 Met Lys Phe  
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ctt atc ttc gca ttt ttc ggt ggt gtt cac ctt tta tcc ctg tgc tct 223  
 Leu Ile Phe Ala Phe Phe Gly Gly Val His Leu Leu Ser Leu Cys Ser  
 5 10 15

ggg aaa gct ata tgc aag aat ggc atc tct aag agg act ttt gaa gaa 271  
 Gly Lys Ala Ile Cys Lys Asn Gly Ile Ser Lys Arg Thr Phe Glu Glu  
 20 25 30 35

ata aaa gaa gaa ata gcc agc tgt gga gat gtt gct aaa gca atc atc 319  
 Ile Lys Glu Glu Ile Ala Ser Cys Gly Asp Val Ala Lys Ala Ile Ile  
 40 45 50

aac cta gct gtt tat ggt aaa gcc cag aac aga tcc tat gag cga ttg 367  
 Asn Leu Ala Val Tyr Gly Lys Ala Gln Asn Arg Ser Tyr Glu Arg Leu  
 55 60 65

gca ctt ctg gtt gat act gtt gga ccc aga ctg agt ggc tcc aag aac 415  
 Ala Leu Leu Val Asp Thr Val Gly Pro Arg Leu Ser Gly Ser Lys Asn  
 70 75 80

cta gaa aaa gcc atc caa att atg tac caa aac ctg cag caa gat ggg 463  
 Leu Glu Lys Ala Ile Gln Ile Met Tyr Gln Asn Leu Gln Gln Asp Gly  
 85 90 95

ctg gag aaa gtt cac ctg gag cca gtg aga ata ccc cac tgg gag agg 511  
 Leu Glu Lys Val His Leu Glu Pro Val Arg Ile Pro His Trp Glu Arg  
 100 105 110 115

gga gaa gaa tca gct gtg atg ctg gag cca aga att cat aag ata gcc 559  
 Gly Glu Glu Ser Ala Val Met Leu Glu Pro Arg Ile His Lys Ile Ala  
 120 125 130

atc ctg ggt ctt ggc agc agc att ggg act cct cca gaa ggc att aca 607  
 Ile Leu Gly Leu Gly Ser Ser Ile Gly Thr Pro Pro Glu Gly Ile Thr  
 135 140 145

gca gaa gtt ctg gtg gtg acc tct ttc gat gaa ctg cag aga agg gcc 655  
 Ala Glu Val Leu Val Val Thr Ser Phe Asp Glu Leu Gln Arg Arg Ala  
 150 155 160

tca gaa gca aga ggg aag att gtt gtt tat aac caa cct tac atc aac 703

Ser	Glu	Ala	Arg	Gly	Lys	Ile	Val	Val	Tyr	Asn	Gln	Pro	Tyr	Ile	Asn	
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tac	tca	agg	acg	gtg	caa	tac	cga	acg	cag	ggg	gcg	gtg	gaa	gct	gcc	751
Tyr	Ser	Arg	Thr	Val	Gln	Tyr	Arg	Thr	Gln	Gly	Ala	Val	Glu	Ala	Ala	
180					185					190					195	
aag	gtt	ggg	gct	ttg	gca	tct	ctc	att	cga	tcc	gtg	gcc	tcc	ttc	tcc	799
Lys	Val	Gly	Ala	Leu	Ala	Ser	Leu	Ile	Arg	Ser	Val	Ala	Ser	Phe	Ser	
				200					205					210		
atc	tac	agt	cct	cac	aca	ggg	att	cag	gaa	tac	cag	gat	ggc	gtg	ccc	847
Ile	Tyr	Ser	Pro	His	Thr	Gly	Ile	Gln	Glu	Tyr	Gln	Asp	Gly	Val	Pro	
			215					220					225			
aag	att	cca	aca	gcc	tgt	att	acg	gtg	gaa	gat	gca	gaa	atg	atg	tca	895
Lys	Ile	Pro	Thr	Ala	Cys	Ile	Thr	Val	Glu	Asp	Ala	Glu	Met	Met	Ser	
		230					235					240				
aga	atg	gct	tct	cat	ggg	atc	aaa	att	gtc	att	cag	cta	aag	atg	ggg	943
Arg	Met	Ala	Ser	His	Gly	Ile	Lys	Ile	Val	Ile	Gln	Leu	Lys	Met	Gly	
	245					250					255					
gca	aag	acc	tac	cca	gat	act	gat	tcc	ttc	aac	act	gta	gca	gag	atc	991
Ala	Lys	Thr	Tyr	Pro	Asp	Thr	Asp	Ser	Phe	Asn	Thr	Val	Ala	Glu	Ile	
260					265					270					275	
act	ggg	agc	aaa	tat	cca	gaa	cag	gtt	gta	ctg	gtc	agt	gga	cat	ctg	1039
Thr	Gly	Ser	Lys	Tyr	Pro	Glu	Gln	Val	Val	Leu	Val	Ser	Gly	His	Leu	
				280					285					290		
gac	agc	tgg	gat	gtt	ggg	cag	ggg	gcc	atg	gat	gat	ggc	ggg	gga	gcc	1087
Asp	Ser	Trp	Asp	Val	Gly	Gln	Gly	Ala	Met	Asp	Asp	Gly	Gly	Gly	Ala	
			295					300					305			
ttt	ata	tca	tgg	gaa	gca	ctc	tca	ctt	att	aaa	gat	ctt	ggg	ctg	cgt	1135
Phe	Ile	Ser	Trp	Glu	Ala	Leu	Ser	Leu	Ile	Lys	Asp	Leu	Gly	Leu	Arg	
		310					315					320				
cca	aag	agg	act	ctg	cgg	ctg	gtg	ctc	tgg	act	gca	gaa	gaa	caa	ggg	1183
Pro	Lys	Arg	Thr	Leu	Arg	Leu	Val	Leu	Trp	Thr	Ala	Glu	Glu	Gln	Gly	
	325					330					335					
gga	gtt	ggg	gcc	ttc	cag	tat	tat	cag	tta	cac	aag	gta	aat	att	tcc	1231
Gly	Val	Gly	Ala	Phe	Gln	Tyr	Tyr	Gln	Leu	His	Lys	Val	Asn	Ile	Ser	
340					345				350						355	
aac	tac	agt	ctg	gtg	atg	gag	tct	gac	gca	gga	acc	ttc	tta	ccc	act	1279
Asn	Tyr	Ser	Leu	Val	Met	Glu	Ser	Asp	Ala	Gly	Thr	Phe	Leu	Pro	Thr	
				360				365						370		
ggg	ctg	caa	ttc	act	ggc	agt	gaa	aag	gcc	agg	gcc	atc	atg	gag	gag	1327
Gly	Leu	Gln	Phe	Thr	Gly	Ser	Glu	Lys	Ala	Arg	Ala	Ile	Met	Glu	Glu	
			375					380					385			
gtt	atg	agc	ctg	ctg	cag	ccc	ctc	aat	atc	act	cag	gtc	ctg	agc	cat	1375
Val	Met	Ser	Leu	Leu	Gln	Pro	Leu	Asn	Ile	Thr	Gln	Val	Leu	Ser	His	
			390				395					400				
gga	gaa	ggg	aca	gac	atc	aac	ttt	tgg	atc	caa	gct	gga	gtg	cct	gga	1423
Gly	Glu	Gly	Thr	Asp	Ile	Asn	Phe	Trp	Ile	Gln	Ala	Gly	Val	Pro	Gly	
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gcc agt cta ctt gat gac tta tac aag tat ttc ttc ttc cat cac tcc 1471
Ala Ser Leu Leu Asp Asp Leu Tyr Lys Tyr Phe Phe Phe His His Ser
420 425 430 435

cac gga gac acc atg act gtc atg gat cca aag cag atg aat gtt gct 1519
His Gly Asp Thr Met Thr Val Met Asp Pro Lys Gln Met Asn Val Ala
440 445 450

gct gct gtt tgg gct gtt gtt tct tat gtt gtt gca gac atg gaa gaa 1567
Ala Ala Val Trp Ala Val Val Ser Tyr Val Val Ala Asp Met Glu Glu
455 460 465

atg ctg cct agg tcc tag aaacagtaag aaagaaacgt tttcatgctt 1615
Met Leu Pro Arg Ser *
470

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ctggccagga atcctggggtc tgcaactttg gaaaactcct cttcacataa caattttcatc 1675
caatttcattc tcaaagcaca actctatttc atgcttttctg ttattatctt tcttgatact 1735
ttccaaattc tctgattcta gaaaaaggaa tcattctccc ctccctccca ccacatagaa 1795
tcaacatatg gtagggatta cagtgggggc atttctttat atcacctctt aaaaacattg 1855
tttccacttt aaaagtaaac acttaataaa tttttggaag aacaaaaaaa aaaaaaaaaa 1915
aaaaaaaaaa aaa 1928

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<210> 82
<211> 472
<212> PRT
<213> Homo Sapiens

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Phe Glu Glu Ile Lys Glu Glu Ile Ala Ser Cys Gly Asp Val Ala Lys
35 40 45
Ala Ile Ile Asn Leu Ala Val Tyr Gly Lys Ala Gln Asn Arg Ser Tyr
50 55 60
Glu Arg Leu Ala Leu Leu Val Asp Thr Val Gly Pro Arg Leu Ser Gly
65 70 75 80
Ser Lys Asn Leu Glu Lys Ala Ile Gln Ile Met Tyr Gln Asn Leu Gln
85 90 95
Gln Asp Gly Leu Glu Lys Val His Leu Glu Pro Val Arg Ile Pro His
100 105 110
Trp Glu Arg Gly Glu Glu Ser Ala Val Met Leu Glu Pro Arg Ile His
115 120 125
Lys Ile Ala Ile Leu Gly Leu Gly Ser Ser Ile Gly Thr Pro Pro Glu
130 135 140
Gly Ile Thr Ala Glu Val Leu Val Val Thr Ser Phe Asp Glu Leu Gln
145 150 155 160
Arg Arg Ala Ser Glu Ala Arg Gly Lys Ile Val Val Tyr Asn Gln Pro
165 170 175
Tyr Ile Asn Tyr Ser Arg Thr Val Gln Tyr Arg Thr Gln Gly Ala Val
180 185 190
Glu Ala Ala Lys Val Gly Ala Leu Ala Ser Leu Ile Arg Ser Val Ala
195 200 205
Ser Phe Ser Ile Tyr Ser Pro His Thr Gly Ile Gln Glu Tyr Gln Asp
210 215 220
Gly Val Pro Lys Ile Pro Thr Ala Cys Ile Thr Val Glu Asp Ala Glu
225 230 235 240
Met Met Ser Arg Met Ala Ser His Gly Ile Lys Ile Val Ile Gln Leu
245 250 255

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Lys	Met	Gly	Ala	Lys	Thr	Tyr	Pro	Asp	Thr	Asp	Ser	Phe	Asn	Thr	Val	
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Ala	Glu	Ile	Thr	Gly	Ser	Lys	Tyr	Pro	Glu	Gln	Val	Val	Leu	Val	Ser	
		275					280					285				
Gly	His	Leu	Asp	Ser	Trp	Asp	Val	Gly	Gln	Gly	Ala	Met	Asp	Asp	Gly	
	290					295					300					
Gly	Gly	Ala	Phe	Ile	Ser	Trp	Glu	Ala	Leu	Ser	Leu	Ile	Lys	Asp	Leu	
305					310					315					320	
Gly	Leu	Arg	Pro	Lys	Arg	Thr	Leu	Arg	Leu	Val	Leu	Trp	Thr	Ala	Glu	
			325						330					335		
Glu	Gln	Gly	Gly	Val	Gly	Ala	Phe	Gln	Tyr	Tyr	Gln	Leu	His	Lys	Val	
		340						345					350			
Asn	Ile	Ser	Asn	Tyr	Ser	Leu	Val	Met	Glu	Ser	Asp	Ala	Gly	Thr	Phe	
	355						360					365				
Leu	Pro	Thr	Gly	Leu	Gln	Phe	Thr	Gly	Ser	Glu	Lys	Ala	Arg	Ala	Ile	
	370					375					380					
Met	Glu	Glu	Val	Met	Ser	Leu	Leu	Gln	Pro	Leu	Asn	Ile	Thr	Gln	Val	
385					390					395					400	
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Val	Pro	Gly	Ala	Ser	Leu	Leu	Asp	Asp	Leu	Tyr	Lys	Tyr	Phe	Phe	Phe	
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<220>

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Glu Gly Ser Lys Arg Tyr Cys Ile Gln Thr Lys His Val Ala Ile Leu	
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Cys Ala Val Val Val Gly Val Gly Leu Ile Val Gly Leu Ala Val Gly	
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Leu Thr Arg Ser Cys Asp Ser Ser Gly Asp Gly Gly Pro Gly Thr Ala	
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cca gct cct tcc cac ctg cct tct tcc acg gcc agc ccc tca ggt cct	425
Pro Ala Pro Ser His Leu Pro Ser Ser Thr Ala Ser Pro Ser Gly Pro	
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cct gcc cag gac cag gac atc tgc ccg gcc agt gag gat gag agc gga	473
Pro Ala Gln Asp Gln Asp Ile Cys Pro Ala Ser Glu Asp Glu Ser Gly	
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Gln Trp Lys Asn Phe Arg Leu Pro Asp Phe Val Asn Pro Val His Tyr	
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Asp Leu His Val Lys Pro Leu Leu Glu Glu Asp Thr Tyr Thr Gly Thr	
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Val Ser Ile Ser Ile Asn Leu Ser Ala Pro Thr Arg Tyr Leu Trp Leu	
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His Leu Arg Glu Thr Arg Ile Thr Arg Leu Pro Glu Leu Lys Arg Pro	
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Glu Tyr Val Val Val Glu Ala Glu Glu Glu Leu Thr Pro Ser Ser Gly	
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Lys Ser Ile Val Ala Thr Asp His Glu Pro Thr Asp Ala Arg Lys Ser	
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Phe Pro Cys Phe Asp Glu Pro Asn Lys Lys Ala Thr Tyr Thr Ile Ser	
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Ile Thr His Pro Lys Glu Tyr Gly Ala Leu Ser Asn Met Pro Val Ala	
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Lys Glu Glu Ser Val Asp Asp Lys Trp Thr Arg Thr Thr Phe Glu Lys	
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Ser Val Pro Met Ser Thr Tyr Leu Val Cys Phe Ala Val His Gln Phe	
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295 300 305 310	
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Lys	Ser	Val	Phe	Asp	Tyr	Phe	Glu	Glu	Tyr	Phe	Ala	Met	Asn	Tyr	Ser	
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Leu	Pro	Lys	Leu	Asp	Lys	Ile	Ala	Ile	Pro	Asp	Phe	Gly	Thr	Gly	Ala	
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Met	Glu	Asn	Trp	Gly	Leu	Ile	Thr	Tyr	Arg	Glu	Thr	Asn	Leu	Leu	Tyr	
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Asp	Pro	Lys	Glu	Ser	Ala	Ser	Ser	Asn	Gln	Gln	Arg	Val	Ala	Thr	Val	
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Asp	Trp	Trp	Glu	Asp	Leu	Trp	Leu	Asn	Glu	Gly	Phe	Ala	Ser	Phe	Phe	
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Glu	Phe	Leu	Gly	Val	Asn	His	Ala	Glu	Thr	Asp	Trp	Gln	Met	Arg	Asp	
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Gln	Met	Leu	Leu	Glu	Asp	Val	Leu	Pro	Val	Gln	Glu	Asp	Asp	Ser	Leu	
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Thr	Ser	Val	Phe	Asp	Gly	Ile	Ser	Tyr	Ser	Lys	Gly	Ser	Ser	Ile	Leu	
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Gln	Met	Tyr	Leu	Glu	Lys	Tyr	Gln	Phe	Lys	Asn	Ala	Lys	Thr	Ser	Asp	
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Phe	Trp	Ala	Ala	Leu	Glu	Glu	Ala	Ser	Arg	Leu	Pro	Val	Lys	Glu	Val	
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Gly	Val	Lys	Asn	Ile	Thr	Gln	Lys	Arg	Phe	Leu	Leu	Asp	Pro	Arg	Ala	
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585 590 595	
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Ser Glu Lys Glu Gly Ile Thr Leu Asn Ser Ser Asn Pro Ser Gly Asn	
600 605 610	
gct ttt ctc aaa ata aac cca gat cat att ggg ttt tat cgt gta aat	2105
Ala Phe Leu Lys Ile Asn Pro Asp His Ile Gly Phe Tyr Arg Val Asn	
615 620 625 630	
tat gaa gta gca act tgg gac tcg ata gct aca gcg ctc tcc ttg aac	2153
Tyr Glu Val Ala Thr Trp Asp Ser Ile Ala Thr Ala Leu Ser Leu Asn	
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His Lys Thr Phe Ser Ser Ala Asp Arg Ala Ser Leu Ile Asp Asp Ala	
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Phe Ala Leu Ala Arg Ala Gln Leu Leu Asp Tyr Lys Val Ala Leu Asn	
665 670 675	
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Leu Thr Lys Tyr Leu Lys Arg Glu Glu Asn Phe Leu Pro Trp Gln Arg	
680 685 690	
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Val Ile Ser Ala Val Thr Tyr Ile Ile Ser Met Phe Glu Asp Asp Lys	
695 700 705 710	
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Glu Leu Tyr Pro Met Ile Glu Glu Tyr Phe Gln Gly Gln Val Lys Pro	
715 720 725	
att gca gat tct ctg gga tgg aat gat gct gga gac cat gtc aca aag	2441
Ile Ala Asp Ser Leu Gly Trp Asn Asp Ala Gly Asp His Val Thr Lys	
730 735 740	
tta ctc cgt tcc tcc gtg tta ggg ttt gcg tgc aag atg gga gac aga	2489
Leu Leu Arg Ser Ser Val Leu Gly Phe Ala Cys Lys Met Gly Asp Arg	
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gaa gcc ttg aac aat gct tcc tcg tta ttt gag cag tgg cta aat ggg	2537
Glu Ala Leu Asn Asn Ala Ser Ser Leu Phe Glu Gln Trp Leu Asn Gly	
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act gta agc ctt ccc gta aat ctc agg ctt ctg gtg tat cgg tat ggg	2585
Thr Val Ser Leu Pro Val Asn Leu Arg Leu Leu Val Tyr Arg Tyr Gly	
775 780 785 790	
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Met Gln Asn Ser Gly Asn Glu Ile Ser Trp Asn Tyr Thr Leu Glu Gln	
795 800 805	
tac cag aaa act tca tta gct caa gaa aaa gaa aaa ctg ctg tat gga	2681

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Leu	Lys	Asp	Thr	Asn	Leu	Ile	Lys	Thr	Gln	Asp	Val	Phe	Thr	Val	Ile		
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cga	tat	atc	tca	tat	aac	agc	tat	ggg	aag	aac	atg	gcc	tgg	aat	tgg	2825	
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Ile	Gln	Leu	Asn	Trp	Asp	Tyr	Leu	Val	Asn	Arg	Tyr	Thr	Leu	Asn	Asn		
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Gly	Ala	Gly	Glu	Lys	Pro	Arg	Glu	Gln	Val	Leu	Glu	Thr	Val	Lys	Asn		
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Phe	Asn	Leu	Leu	Glu	Ser	Gly	*										
			955														

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<212> PRT

<213> Homo Sapiens

<400> 84

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			20				25					30					
Val	Gly	Leu	Ala	Val	Gly	Leu	Thr	Arg	Ser	Cys	Asp	Ser	Ser	Gly	Asp		



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Pro Val Leu Asn Val Asn Gly Val Lys Asn Ile Thr Gln Lys Arg Phe		
545	550	555
Leu Leu Asp Pro Arg Ala Asn Pro Ser Gln Pro Pro Ser Asp Leu Gly		
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Tyr Thr Trp Asn Ile Pro Val Lys Trp Thr Glu Asp Asn Ile Thr Ser		
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Ser Val Leu Phe Asn Arg Ser Glu Lys Glu Gly Ile Thr Leu Asn Ser		
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Ser Asn Pro Ser Gly Asn Ala Phe Leu Lys Ile Asn Pro Asp His Ile		
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Gly Phe Tyr Arg Val Asn Tyr Glu Val Ala Thr Trp Asp Ser Ile Ala		
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Thr Ala Leu Ser Leu Asn His Lys Thr Phe Ser Ser Ala Asp Arg Ala		
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Ser Leu Ile Asp Asp Ala Phe Ala Leu Ala Arg Ala Gln Leu Leu Asp		
	660	665
Tyr Lys Val Ala Leu Asn Leu Thr Lys Tyr Leu Lys Arg Glu Glu Asn		
	675	680
Phe Leu Pro Trp Gln Arg Val Ile Ser Ala Val Thr Tyr Ile Ile Ser		
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Met Phe Glu Asp Asp Lys Glu Leu Tyr Pro Met Ile Glu Glu Tyr Phe		
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Gln Gly Gln Val Lys Pro Ile Ala Asp Ser Leu Gly Trp Asn Asp Ala		
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Gly Asp His Val Thr Lys Leu Leu Arg Ser Ser Val Leu Gly Phe Ala		
	740	745
Cys Lys Met Gly Asp Arg Glu Ala Leu Asn Asn Ala Ser Ser Leu Phe		
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Glu Gln Trp Leu Asn Gly Thr Val Ser Leu Pro Val Asn Leu Arg Leu		
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Leu Val Tyr Arg Tyr Gly Met Gln Asn Ser Gly Asn Glu Ile Ser Trp		
785	790	795
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Glu Lys Leu Leu Tyr Gly Leu Ala Ser Val Lys Asn Val Thr Leu Leu		
	820	825
Ser Arg Tyr Leu Asp Leu Leu Lys Asp Thr Asn Leu Ile Lys Thr Gln		
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Asp Val Phe Thr Val Ile Arg Tyr Ile Ser Tyr Asn Ser Tyr Gly Lys		
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Arg Tyr Thr Leu Asn Asn Arg Asn Leu Gly Arg Ile Val Thr Ile Ala		
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Glu Pro Phe Asn Thr Glu Leu Gln Leu Trp Gln Met Glu Ser Phe Phe		
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Ala Lys Tyr Pro Gln Ala Gly Ala Gly Glu Lys Pro Arg Glu Gln Val		
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Leu Glu Thr Val Lys Asn Asn Ile Glu Trp Leu Lys Gln His Arg Asn		
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<400> 85

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Asn Leu Asn Gly Ala Val Tyr Ser Val Val Phe Ile Leu Gly Leu Ile
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Phe Val Cys Thr Leu Pro Phe Lys Ile Phe Tyr Asn Phe Asn Arg His
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Trp Pro Phe Gly Asp Thr Leu Cys Lys Ile Ser Gly Thr Ala Phe Leu
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Thr Asn Ile Tyr Gly Ser Met Leu Phe Leu Thr Cys Ile Ser Val Asp
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agg agg aat tct gcc att gtg tgt gct ggt gtc tgg atc cta gtc ctc 652
Arg Arg Asn Ser Ala Ile Val Cys Ala Gly Val Trp Ile Leu Val Leu
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Ser Gly Gly Ile Ser Ala Ser Leu Phe Ser Thr Thr Asn Val Asn Asn
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gca acc acc acc tgc ttt gaa ggc ttc tcc aaa cgt gtc tgg aag act 748
Ala Thr Thr Thr Cys Phe Glu Gly Phe Ser Lys Arg Val Trp Lys Thr
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tat tta tcc aag atc aca ata ttt att gaa gtt gtt ggg ttt atc att 796
Tyr Leu Ser Lys Ile Thr Ile Phe Ile Glu Val Val Gly Phe Ile Ile
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cct cta ata ttg aat gtc tct tgc tct tct gtg gtg ctg aga act ctt 844

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 Arg Lys Pro Ala Thr Leu Ser Gln Ile Gly Thr Asn Lys Lys Lys Val  
 235 240 245  
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 Leu Lys Met Ile Thr Val His Met Ala Val Phe Val Val Cys Phe Val  
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 Pro Tyr Asn Ser Val Leu Phe Leu Tyr Ala Leu Val Arg Ser Gln Ala  
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 Ile Thr Asn Cys Phe Leu Glu Arg Phe Ala Lys Ile Met Tyr Pro Ile  
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 acc ttg tgc ctt gca act ctg aac tgt tgt ttt gac cct ttc atc tat 1084  
 Thr Leu Cys Leu Ala Thr Leu Asn Cys Cys Phe Asp Pro Phe Ile Tyr  
 300 305 310  
 tac ttc acc ctt gaa tcc ttt cag aag tcc ttc tac atc aat gcc cac 1132  
 Tyr Phe Thr Leu Glu Ser Phe Gln Lys Ser Phe Tyr Ile Asn Ala His  
 315 320 325  
 atc aga atg gag tcc ctg ttt aag act gaa aca cct ttg acc aca aag 1180  
 Ile Arg Met Glu Ser Leu Phe Lys Thr Glu Thr Pro Leu Thr Thr Lys  
 330 335 340  
 cct tcc ctt cca gct att caa gag gaa gtg agt gat caa aca aca aat 1228  
 Pro Ser Leu Pro Ala Ile Gln Glu Glu Val Ser Asp Gln Thr Thr Asn  
 345 350 355  
 aat ggt ggt gaa tta atg cta gaa tcc acc ttt tag gtatgagaag 1274  
 Asn Gly Gly Glu Leu Met Leu Glu Ser Thr Phe \*  
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 35 40 45  
 Val Phe Ile Leu Gly Leu Ile Thr Asn Ser Val Ser Leu Phe Val Phe  
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 Cys Phe Arg Met Lys Met Arg Ser Glu Thr Ala Ile Phe Ile Thr Asn  
 65 70 75 80  
 Leu Ala Val Ser Asp Leu Leu Phe Val Cys Thr Leu Pro Phe Lys Ile  
 85 90 95  
 Phe Tyr Asn Phe Asn Arg His Trp Pro Phe Gly Asp Thr Leu Cys Lys  
 100 105 110  
 Ile Ser Gly Thr Ala Phe Leu Thr Asn Ile Tyr Gly Ser Met Leu Phe



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Thr Ala Tyr Gly Lys Thr Gly Ile Arg Asp Val His Leu Glu Leu Lys	
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Asn Leu Thr Met Cys Gly Arg Lys Gly Asp Leu His Phe Ile Arg Phe	
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ccc agc tgt gct atg cac agg ttc att cag atg ggc agc gag aag aac	460
Pro Ser Cys Ala Met His Arg Phe Ile Gln Met Gly Ser Glu Lys Asn	
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Phe Ser Ser Leu His Thr Thr Leu Cys Ala Thr Gly Gly Gly Ala Phe	
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aaa ttc gaa gag gac ttc aga atg att gct gac ctg cag ctg cat aaa	556
Lys Phe Glu Glu Asp Phe Arg Met Ile Ala Asp Leu Gln Leu His Lys	
120 125 130 135	
ctg gat gaa ctg gac tgt ctg att cag ggc ctg ctt tat gtc gac tct	604
Leu Asp Glu Leu Asp Cys Leu Ile Gln Gly Leu Leu Tyr Val Asp Ser	
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gtt ggc ttc aac ggc aag cca gaa tgt tac tat ttt gaa aat ccc aca	652
Val Gly Phe Asn Gly Lys Pro Glu Cys Tyr Tyr Phe Glu Asn Pro Thr	
155 160 165	
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Asn Pro Glu Leu Cys Gln Lys Lys Pro Tyr Cys Leu Asp Asn Pro Tyr	
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Pro Met Leu Leu Val Asn Met Gly Ser Gly Val Ser Ile Leu Ala Val	
185 190 195	
tac tcc aag gac aac tat aaa aga gtt aca ggg acc agc ttt ggc aac	796
Tyr Ser Lys Asp Asn Tyr Lys Arg Val Thr Gly Thr Ser Phe Gly Asn	
200 205 210 215	
atg atg agt aaa gaa aag cga gat tcc atc agc aag gaa gac ctc gcc	844
Met Met Ser Lys Glu Lys Arg Asp Ser Ile Ser Lys Glu Asp Leu Ala	
220 225 230	
cgg gcc aca ttg gtc acc atc acc aac aac att ggc tcc att gct cgg	892
Arg Ala Thr Leu Val Thr Ile Thr Asn Asn Ile Gly Ser Ile Ala Arg	
235 240 245	
atg tgt gcg ttg aat gag aac ata gac aga gtt gtg ttt gtt gga aat	940
Met Cys Ala Leu Asn Glu Asn Ile Asp Arg Val Val Phe Val Gly Asn	
250 255 260	
ttt ctc aga atc aat atg gtc tcc atg aag ctg ctg gca tat gcc atg	988
Phe Leu Arg Ile Asn Met Val Ser Met Lys Leu Leu Ala Tyr Ala Met	
265 270 275	
gat ttt tgg tcc aaa gga caa ctg aaa gct ctg ttt ttg gaa cat gag	1036
Asp Phe Trp Ser Lys Gly Gln Leu Lys Ala Leu Phe Leu Glu His Glu	
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ggg tat ttt gga gcc gtt ggg gca ctg ttg gaa ctg ttc aaa atg act	1084



Gly Tyr Phe Gly Ala Val Gly Ala Leu Leu Glu Leu Phe Lys Met Thr  
 300 305 310

gat gac aag tag agacgagcag tggaggaaac agcctcccaa aaggacagag 1136  
 Asp Asp Lys \*

aactaaaaaa ttgctgctgg agaaggtgaa agtcgctttg ggacggggagc caagccatta 1196  
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 tgaaaagttg tttgatgttt aagaaggacc tgatatgtaa gcgctgggtca tttttcttct 1436  
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 tattgagctt attgttgaaa gggatttttg aaggacagaa caattactcc atgatgaatc 2396  
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 <212> PRT  
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 Ile Thr Ala Glu Glu Glu Gln Glu Glu Val Glu Asn Leu Lys Ser Ile  
 35 40 45  
 Arg Lys Tyr Leu Thr Ser Asn Thr Ala Tyr Gly Lys Thr Gly Ile Arg  
 50 55 60  
 Asp Val His Leu Glu Leu Lys Asn Leu Thr Met Cys Gly Arg Lys Gly  
 65 70 75 80  
 Asp Leu His Phe Ile Arg Phe Pro Ser Cys Ala Met His Arg Phe Ile  
 85 90 95  
 Gln Met Gly Ser Glu Lys Asn Phe Ser Ser Leu His Thr Thr Leu Cys  
 100 105 110  
 Ala Thr Gly Gly Gly Ala Phe Lys Phe Glu Glu Asp Phe Arg Met Ile  
 115 120 125  
 Ala Asp Leu Gln Leu His Lys Leu Asp Glu Leu Asp Cys Leu Ile Gln  
 130 135 140  
 Gly Leu Leu Tyr Val Asp Ser Val Gly Phe Asn Gly Lys Pro Glu Cys  
 145 150 155 160  
 Tyr Tyr Phe Glu Asn Pro Thr Asn Pro Glu Leu Cys Gln Lys Lys Pro  
 165 170 175  
 Tyr Cys Leu Asp Asn Pro Tyr Pro Met Leu Leu Val Asn Met Gly Ser  
 180 185 190  
 Gly Val Ser Ile Leu Ala Val Tyr Ser Lys Asp Asn Tyr Lys Arg Val



gtc acc aag aag cta gtg cgg cag gca gag aag atg ggc tac aag gcc	485
Val Thr Lys Lys Leu Val Arg Gln Ala Glu Lys Met Gly Tyr Lys Ala	
140 145 150	
ata ttt gtg aca gtg gac aca cct tac ctg ggc aac cgt ctg gat gat	533
Ile Phe Val Thr Val Asp Thr Pro Tyr Leu Gly Asn Arg Leu Asp Asp	
155 160 165 170	
gtg cgt aac aga ttc aaa ctg ccg cca caa ctc agg atg aaa aat ttt	581
Val Arg Asn Arg Phe Lys Leu Pro Pro Gln Leu Arg Met Lys Asn Phe	
175 180 185	
gaa acc agt act tta tca ttt tct cct gag gaa aat ttt gga gac gac	629
Glu Thr Ser Thr Leu Ser Phe Ser Pro Glu Glu Asn Phe Gly Asp Asp	
190 195 200	
agt gga ctt gct gca tat gtg gct aaa gca ata gac cca tct atc agc	677
Ser Gly Leu Ala Ala Tyr Val Ala Lys Ala Ile Asp Pro Ser Ile Ser	
205 210 215	
tgg gaa gat atc aaa tgg ctg aga aga ctg aca tca ttg cca att gtt	725
Trp Glu Asp Ile Lys Trp Leu Arg Arg Leu Thr Ser Leu Pro Ile Val	
220 225 230	
gca aag ggc att ttg aga ggt gat gat gcc agg gag gct gtt aaa cat	773
Ala Lys Gly Ile Leu Arg Gly Asp Asp Ala Arg Glu Ala Val Lys His	
235 240 245 250	
ggc ttg aat ggg atc ttg gtg tcg aat cat ggg gct cga caa ctc gat	821
Gly Leu Asn Gly Ile Leu Val Ser Asn His Gly Ala Arg Gln Leu Asp	
255 260 265	
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Gly Val Pro Ala Thr Ile Asp Val Leu Pro Glu Ile Val Glu Ala Val	
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gaa ggg aag gtg gaa gtc ttc ctg gac ggg ggt gtg cgg aaa ggc act	917
Glu Gly Lys Val Glu Val Phe Leu Asp Gly Gly Val Arg Lys Gly Thr	
285 290 295	
gat gtt ctg aaa gct ctg gct ctt ggc gcc aag gct gtg ttt gtg ggg	965
Asp Val Leu Lys Ala Leu Ala Leu Gly Ala Lys Ala Val Phe Val Gly	
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aga cca atc gtt tgg ggc tta gct ttc cag ggg gag aaa ggt gtt caa	1013
Arg Pro Ile Val Trp Gly Leu Ala Phe Gln Gly Glu Lys Gly Val Gln	
315 320 325 330	
gat gtc ctc gag ata cta aag gaa gaa ttc cgg ttg gcc atg gct ctg	1061
Asp Val Leu Glu Ile Leu Lys Glu Glu Phe Arg Leu Ala Met Ala Leu	
335 340 345	
agt ggg tgc cag aat gtg aaa gtc atc gac aag aca ttg gtg agg aaa	1109
Ser Gly Cys Gln Asn Val Lys Val Ile Asp Lys Thr Leu Val Arg Lys	
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aat cct ttg gcc gtt tcc aag atc tga	1136
Asn Pro Leu Ala Val Ser Lys Ile *	
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<210> 90  
 <211> 370  
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<400> 90

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Asp Glu Glu Thr Leu Ala Asp Asn Ile Ala Ala Phe Ser Arg Trp Lys
          35          40          45
Leu Tyr Pro Arg Met Leu Arg Asn Val Ala Glu Thr Asp Leu Ser Thr
          50          55          60
Ser Val Leu Gly Gln Arg Val Ser Met Pro Ile Cys Val Gly Ala Thr
65          70          75          80
Ala Met Gln Arg Met Ala His Val Asp Gly Glu Leu Ala Thr Val Arg
          85          90          95
Ala Cys Gln Ser Leu Gly Thr Gly Met Met Leu Ser Ser Trp Ala Thr
          100          105          110
Ser Ser Ile Glu Glu Val Ala Glu Ala Gly Pro Glu Ala Leu Arg Trp
          115          120          125
Leu Gln Leu Tyr Ile Tyr Lys Asp Arg Glu Val Thr Lys Lys Leu Val
          130          135          140
Arg Gln Ala Glu Lys Met Gly Tyr Lys Ala Ile Phe Val Thr Val Asp
145          150          155          160
Thr Pro Tyr Leu Gly Asn Arg Leu Asp Asp Val Arg Asn Arg Phe Lys
          165          170          175
Leu Pro Pro Gln Leu Arg Met Lys Asn Phe Glu Thr Ser Thr Leu Ser
          180          185          190
Phe Ser Pro Glu Glu Asn Phe Gly Asp Asp Ser Gly Leu Ala Ala Tyr
          195          200          205
Val Ala Lys Ala Ile Asp Pro Ser Ile Ser Trp Glu Asp Ile Lys Trp
          210          215          220
Leu Arg Arg Leu Thr Ser Leu Pro Ile Val Ala Lys Gly Ile Leu Arg
225          230          235          240
Gly Asp Asp Ala Arg Glu Ala Val Lys His Gly Leu Asn Gly Ile Leu
          245          250          255
Val Ser Asn His Gly Ala Arg Gln Leu Asp Gly Val Pro Ala Thr Ile
          260          265          270
Asp Val Leu Pro Glu Ile Val Glu Ala Val Glu Gly Lys Val Glu Val
          275          280          285
Phe Leu Asp Gly Gly Val Arg Lys Gly Thr Asp Val Leu Lys Ala Leu
          290          295          300
Ala Leu Gly Ala Lys Ala Val Phe Val Gly Arg Pro Ile Val Trp Gly
305          310          315          320
Leu Ala Phe Gln Gly Glu Lys Gly Val Gln Asp Val Leu Glu Ile Leu
          325          330          335
Lys Glu Glu Phe Arg Leu Ala Met Ala Leu Ser Gly Cys Gln Asn Val
          340          345          350
Lys Val Ile Asp Lys Thr Leu Val Arg Lys Asn Pro Leu Ala Val Ser
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Lys Ile
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<220>

<221> CDS

<222> (62)...(1240)

<400> 91

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  Met Gly Thr Lys Gly Lys Val Ile Lys Cys Lys Ala Ala Ile Ala Trp
    1             5             10             15

gaa gca ggc aag ccc ctt tgc att gaa gag gtt gaa gta gct ccc ccc 157
Glu Ala Gly Lys Pro Leu Cys Ile Glu Glu Val Glu Val Ala Pro Pro
          20             25             30

aag gct cat gaa gtt cgc att cag atc att gct acc tcc ctg tgc cat 205
Lys Ala His Glu Val Arg Ile Gln Ile Ile Ala Thr Ser Leu Cys His
          35             40             45

act gat gcc agt gtt atc gat tct aaa ttt gag ggc cta gct ttc cca 253
Thr Asp Ala Ser Val Ile Asp Ser Lys Phe Glu Gly Leu Ala Phe Pro
          50             55             60

gtg atc gtt ggc cat gag gct gca ggt att gtg gaa agt att ggg cca 301
Val Ile Val Gly His Glu Ala Ala Gly Ile Val Glu Ser Ile Gly Pro
          65             70             75             80

gga gtg acc aac gtc aaa cca ggt gac aaa gta att cca ctt tat gca 349
Gly Val Thr Asn Val Lys Pro Gly Asp Lys Val Ile Pro Leu Tyr Ala
          85             90             95

cct cta tgt aga aaa tgc aag ttt tgt ctg agt cca ctc aca aat ttg 397
Pro Leu Cys Arg Lys Cys Lys Phe Cys Leu Ser Pro Leu Thr Asn Leu
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tgt ggg aaa atc agt aat ctc aaa agt cct gct agt gat caa caa cta 445
Cys Gly Lys Ile Ser Asn Leu Lys Ser Pro Ala Ser Asp Gln Gln Leu
          115            120            125

atg gaa gac aaa acc agc agg ttt acc tgc aaa gga aaa cca gtt tac 493
Met Glu Asp Lys Thr Ser Arg Phe Thr Cys Lys Gly Lys Pro Val Tyr
          130            135            140

cat ttc ttt gga acc agt aca ttc tct cag tac act gtg gtg tca gat 541
His Phe Phe Gly Thr Ser Thr Phe Ser Gln Tyr Thr Val Val Ser Asp
          145            150            155            160

atc aat ctt gcc aaa ata gat gat gat gca aat tta gag aga gtt tgt 589
Ile Asn Leu Ala Lys Ile Asp Asp Asp Ala Asn Leu Glu Arg Val Cys
          165            170            175

ctg ctt gga tgt ggg ttt tca act ggc tat ggg gct gca atc aac aat 637
Leu Leu Gly Cys Gly Phe Ser Thr Gly Tyr Gly Ala Ala Ile Asn Asn
          180            185            190

gcc aag gtc acc cct ggt tcg act tgt gct gtc ttt ggc cta gga ggt 685
Ala Lys Val Thr Pro Gly Ser Thr Cys Ala Val Phe Gly Leu Gly Gly
          195            200            205

gtg ggt ctt tct gct gta atg ggt tgt aaa gca gca gga gct tcc aga 733
Val Gly Leu Ser Ala Val Met Gly Cys Lys Ala Ala Gly Ala Ser Arg
          210            215            220

atc ata ggt att gac atc aac agt gag aag ttt gtg aag gct aaa gcc 781
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Leu Gly Ala Thr Asp Cys Leu Asn Pro Arg Asp Leu His Lys Pro Ile	
245 250 255	
cag gaa gtt atc att gaa ttg acc aag gga ggt gtg gat ttt gcc ctt	877
Gln Glu Val Ile Ile Glu Leu Thr Lys Gly Gly Val Asp Phe Ala Leu	
260 265 270	
gac tgt gca ggt gga tct gaa acc atg aaa gca gcc ctg gac tgt aca	925
Asp Cys Ala Gly Gly Ser Glu Thr Met Lys Ala Ala Leu Asp Cys Thr	
275 280 285	
acc gca ggc tgg gga tca tgt act ttc att gga gta gct gct ggt agc	973
Thr Ala Gly Trp Gly Ser Cys Thr Phe Ile Gly Val Ala Ala Gly Ser	
290 295 300	
aaa gga ttg act att ttt cca gag gag cta ata atc ggc cgt act ata	1021
Lys Gly Leu Thr Ile Phe Pro Glu Glu Leu Ile Ile Gly Arg Thr Ile	
305 310 315 320	
aat gga aca ttc ttt ggt ggt tgg aaa agt gta gat tct atc cca aag	1069
Asn Gly Thr Phe Phe Gly Gly Trp Lys Ser Val Asp Ser Ile Pro Lys	
325 330 335	
ctg gtc act gac tat aag aat aag aaa ttc aat ctg gat gca ttg gtg	1117
Leu Val Thr Asp Tyr Lys Asn Lys Lys Phe Asn Leu Asp Ala Leu Val	
340 345 350	
acc cat acc ctg cct ttt gac aaa atc agt gag gca ttt gac cta atg	1165
Thr His Thr Leu Pro Phe Asp Lys Ile Ser Glu Ala Phe Asp Leu Met	
355 360 365	
aac caa gga aaa agc gtc cga aca atc ctc atc ttt gga aga tgc cag	1213
Asn Gln Gly Lys Ser Val Arg Thr Ile Leu Ile Phe Gly Arg Cys Gln	
370 375 380	
gag caa ttc aga ata cta tct gat tga atgtgaacct gcctgggttaa	1260
Glu Gln Phe Arg Ile Leu Ser Asp *	
385 390	
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atatgggaac ataaaagagc tttaaataatt atagactttg tacctgttat atatatgaat	1380
attccctatg ttaaataata ataataacta gtgtttatga atagaatcat atcatcttta	1440
gaaattgttt aaaattagtt ctgggaagtt gaaagtgggg aatgaagaga taataaataa	1500
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attatacttt tctctccacg ttttgtctat gttgaaaatt ttctgggagc taaatgatga	1620
gaacacatgg acacatgatg gggaacaaca cacactgggg cctgttgagg gcagggagtc	1680
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gagatgatct gtgcagcaaa gcaccatggt acatgtttac ctatgtaaca aacctgcaca	1800
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acctggtatt tgatagcaca acagggagac tatagtcaac agcaatttaa ttgtatatatt	1920
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<212> PRT	
<213> Homo Sapiens	

<400> 92

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          20          25          30
Lys Ala His Glu Val Arg Ile Gln Ile Ile Ala Thr Ser Leu Cys His
          35          40          45
Thr Asp Ala Ser Val Ile Asp Ser Lys Phe Glu Gly Leu Ala Phe Pro
          50          55          60
Val Ile Val Gly His Glu Ala Ala Gly Ile Val Glu Ser Ile Gly Pro
65          70          75          80
Gly Val Thr Asn Val Lys Pro Gly Asp Lys Val Ile Pro Leu Tyr Ala
          85          90          95
Pro Leu Cys Arg Lys Cys Lys Phe Cys Leu Ser Pro Leu Thr Asn Leu
          100          105          110
Cys Gly Lys Ile Ser Asn Leu Lys Ser Pro Ala Ser Asp Gln Gln Leu
          115          120          125
Met Glu Asp Lys Thr Ser Arg Phe Thr Cys Lys Gly Lys Pro Val Tyr
          130          135          140
His Phe Phe Gly Thr Ser Thr Phe Ser Gln Tyr Thr Val Val Ser Asp
145          150          155          160
Ile Asn Leu Ala Lys Ile Asp Asp Asp Ala Asn Leu Glu Arg Val Cys
          165          170          175
Leu Leu Gly Cys Gly Phe Ser Thr Gly Tyr Gly Ala Ala Ile Asn Asn
          180          185          190
Ala Lys Val Thr Pro Gly Ser Thr Cys Ala Val Phe Gly Leu Gly Gly
          195          200          205
Val Gly Leu Ser Ala Val Met Gly Cys Lys Ala Ala Gly Ala Ser Arg
210          215          220
Ile Ile Gly Ile Asp Ile Asn Ser Glu Lys Phe Val Lys Ala Lys Ala
225          230          235          240
Leu Gly Ala Thr Asp Cys Leu Asn Pro Arg Asp Leu His Lys Pro Ile
          245          250          255
Gln Glu Val Ile Ile Glu Leu Thr Lys Gly Gly Val Asp Phe Ala Leu
          260          265          270
Asp Cys Ala Gly Gly Ser Glu Thr Met Lys Ala Ala Leu Asp Cys Thr
          275          280          285
Thr Ala Gly Trp Gly Ser Cys Thr Phe Ile Gly Val Ala Ala Gly Ser
290          295          300
Lys Gly Leu Thr Ile Phe Pro Glu Glu Leu Ile Ile Gly Arg Thr Ile
305          310          315          320
Asn Gly Thr Phe Phe Gly Gly Trp Lys Ser Val Asp Ser Ile Pro Lys
          325          330          335
Leu Val Thr Asp Tyr Lys Asn Lys Lys Phe Asn Leu Asp Ala Leu Val
          340          345          350
Thr His Thr Leu Pro Phe Asp Lys Ile Ser Glu Ala Phe Asp Leu Met
          355          360          365
Asn Gln Gly Lys Ser Val Arg Thr Ile Leu Ile Phe Gly Arg Cys Gln
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Glu Gln Phe Arg Ile Leu Ser Asp
385          390
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<210> 93

<211> 1365

<212> DNA

<213> Homo Sapiens

<220>

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<222> (106)...(1179)

<400> 93

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 Met Glu Lys Tyr  
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gtg gct gct atg gtg ctg agt gca gct gga gat gcc ctg ggg tac tac 165  
 Val Ala Ala Met Val Leu Ser Ala Ala Gly Asp Ala Leu Gly Tyr Tyr  
 5 10 15 20

aat ggg aag tgg gag ttc ctc cag gat ggg gag aag ata cac cgg cag 213  
 Asn Gly Lys Trp Glu Phe Leu Gln Asp Gly Glu Lys Ile His Arg Gln  
 25 30 35

ttg gcc cag ctg ggc ggc ttg gat gcc cta gac gtg gga agg tgg aga 261  
 Leu Ala Gln Leu Gly Gly Leu Asp Ala Leu Asp Val Gly Arg Trp Arg  
 40 45 50

gtt agt gac gac aca gtg atg cac ttg gcc aca gca gaa gct ctt gtg 309  
 Val Ser Asp Asp Thr Val Met His Leu Ala Thr Ala Glu Ala Leu Val  
 55 60 65

gaa gct ggg aaa gcc cct aag ttg act caa ctg tat tac ctc ctt gct 357  
 Glu Ala Gly Lys Ala Pro Lys Leu Thr Gln Leu Tyr Tyr Leu Leu Ala  
 70 75 80

aag cat tac caa gac tgc atg gaa gac atg gat ggg cgg gca cca ggt 405  
 Lys His Tyr Gln Asp Cys Met Glu Asp Met Asp Gly Arg Ala Pro Gly  
 85 90 95 100

ggt gcc tcg gtg cac aac gcc atg cag ctg aag ccg ggc aag ccc aat 453  
 Gly Ala Ser Val His Asn Ala Met Gln Leu Lys Pro Gly Lys Pro Asn  
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 Gly Trp Arg Ile Pro Phe Asn Ser His Glu Gly Gly Cys Gly Ala Ala  
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 Met Arg Ala Met Cys Ile Gly Leu Arg Phe Pro His His Ser Gln Leu  
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gac aca ctg atc caa gtg agc atc gag agt ggt cgg atg acc cac cac 597  
 Asp Thr Leu Ile Gln Val Ser Ile Glu Ser Gly Arg Met Thr His His  
 150 155 160

cac cca aca ggc tac ctg ggg gcc ctt gcg tct gct ctt ttt aca gcc 645  
 His Pro Thr Gly Tyr Leu Gly Ala Leu Ala Ser Ala Leu Phe Thr Ala  
 165 170 175 180

tat gct gtg aat agc aga cca ccc ttg cag tgg gga aaa gga ctg atg 693  
 Tyr Ala Val Asn Ser Arg Pro Pro Leu Gln Trp Gly Lys Gly Leu Met  
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gag ctg cta cca gaa gct aaa aag tac att gtc caa tca ggc tac ttt 741  
 Glu Leu Leu Pro Glu Ala Lys Lys Tyr Ile Val Gln Ser Gly Tyr Phe  
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gta gag gaa aat ctt caa cac tgg tcc tac ttc caa acc aaa tgg gaa 789  
 Val Glu Glu Asn Leu Gln His Trp Ser Tyr Phe Gln Thr Lys Trp Glu  
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Asn Tyr Leu Lys Leu Arg Gly Ile Leu Asp Gly Glu Ser Ala Pro Thr	
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Phe Pro Glu Ser Phe Gly Val Lys Glu Arg Asp Gln Phe Tyr Thr Ser	
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Leu Ser Tyr Ser Gly Trp Gly Gly Ser Ser Gly His Asp Ala Pro Met	
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Ile Ala Tyr Asp Ala Val Leu Ala Ala Gly Asp Ser Trp Lys Glu Leu	
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Ala His Arg Ala Phe Phe His Gly Gly Asp Ser Asp Ser Thr Ala Ala	
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Ile Ala Gly Cys Trp Trp Gly Val Met Tyr Gly Phe Lys Gly Val Ser	
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Pro Ser Asn Tyr Glu Lys Leu Glu Tyr Arg Asn Arg Leu Glu Glu Thr	
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Ala Arg Ala Leu Tyr Ser Leu Gly Ser Lys Glu Asp Thr Val Ile Ser	
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Leu *	

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Tyr Leu Leu Ala Lys His Tyr Gln Asp Cys Met Glu Asp Met Asp Gly
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Gly Lys Pro Asn Gly Trp Arg Ile Pro Phe Asn Ser His Glu Gly Gly
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His	Ser	Gln	Leu	Asp	Thr	Leu	Ile	Gln	Val	Ser	Ile	Glu	Ser	Gly	Arg
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Met	Thr	His	His	His	Pro	Thr	Gly	Tyr	Leu	Gly	Ala	Leu	Ala	Ser	Ala
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Leu	Phe	Thr	Ala	Tyr	Ala	Val	Asn	Ser	Arg	Pro	Pro	Leu	Gln	Trp	Gly
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Thr	Lys	Trp	Glu	Asn	Tyr	Leu	Lys	Leu	Arg	Gly	Ile	Leu	Asp	Gly	Glu
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Ser	Ala	Pro	Thr	Phe	Pro	Glu	Ser	Phe	Gly	Val	Lys	Glu	Arg	Asp	Gln
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Phe	Tyr	Thr	Ser	Leu	Ser	Tyr	Ser	Gly	Trp	Gly	Gly	Ser	Ser	Gly	His
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Asp	Ala	Pro	Met	Ile	Ala	Tyr	Asp	Ala	Val	Leu	Ala	Ala	Gly	Asp	Ser
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Trp	Lys	Glu	Leu	Ala	His	Arg	Ala	Phe	Phe	His	Gly	Gly	Asp	Ser	Asp
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Ser	Thr	Ala	Ala	Ile	Ala	Gly	Cys	Trp	Trp	Gly	Val	Met	Tyr	Gly	Phe
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Lys	Gly	Val	Ser	Pro	Ser	Asn	Tyr	Glu	Lys	Leu	Glu	Tyr	Arg	Asn	Arg
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Leu	Glu	Glu	Thr	Ala	Arg	Ala	Leu	Tyr	Ser	Leu	Gly	Ser	Lys	Glu	Asp
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ggg	gag	gag	gaa	ccg	gga	agg	ggg	ggc	agg	gcg	agc	gga	gag	cta	gct	96
Gly	Glu	Glu	Glu	Pro	Gly	Arg	Gly	Gly	Arg	Ala	Ser	Gly	Glu	Leu	Ala	
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gtg	ttc	ctg	agg	cgc	agc	cgc	cgc	cta	ggg	cgg	tgg	gga	gga	gga	ggg	144
Val	Phe	Leu	Arg	Arg	Ser	Arg	Arg	Leu	Gly	Arg	Trp	Gly	Gly	Gly	Gly	
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agc	cgc	ggg	gct	tgg	cgg	ggt	cgg	gag	gga	ggg	acg	tgc	tgg	ggg	aac	192
Ser	Arg	Gly	Ala	Trp	Arg		Arg	Glu	Gly	Gly	Thr	Cys	Trp	Gly	Asn	
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Glu	Leu	Gly	Lys	Thr	Glu	Arg	Ala	Leu	Cys	Arg	Ala	Gly	Gly	Arg	Arg	
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Gly Gly Gln Arg Pro Gln Pro Gly Gly Arg Gly Arg Met Glu Gln Val	
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gag atc ctg agg aaa ttc atc cag agg gtc cag gcc atg aag agt cct	336
Glu Ile Leu Arg Lys Phe Ile Gln Arg Val Gln Ala Met Lys Ser Pro	
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gac cac aat ggg gag gac aac ttc gcc cgg gac ttc atg cgg tta aga	384
Asp His Asn Gly Glu Asp Asn Phe Ala Arg Asp Phe Met Arg Leu Arg	
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Arg Leu Ser Thr Lys Tyr Arg Thr Glu Lys Ile Tyr Pro Thr Ala Thr	
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Gly Glu Lys Glu Glu Asn Val Lys Lys Asn Arg Tyr Lys Asp Ile Leu	
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cca ttt gat cac agc cga gtt aaa ttg aca tta aag act cct tca caa	528
Pro Phe Asp His Ser Arg Val Lys Leu Thr Leu Lys Thr Pro Ser Gln	
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Asp Ser Asp Tyr Ile Asn Ala Asn Phe Ile Lys Gly Val Tyr Gly Pro	
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aaa gca tat gta gca act caa gga cct tta gca aat aca gta ata gat	624
Lys Ala Tyr Val Ala Thr Gln Gly Pro Leu Ala Asn Thr Val Ile Asp	
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Phe Trp Arg Met Ile Trp Glu Tyr Asn Val Val Ile Ile Val Met Ala	
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Cys Arg Glu Phe Glu Met Gly Arg Lys Lys Cys Glu Arg Tyr Trp Pro	
225 230 235 240	
ttg tat gga gaa gac ccc ata acg ttt gca cca ttt aaa att tct tgt	768
Leu Tyr Gly Glu Asp Pro Ile Thr Phe Ala Pro Phe Lys Ile Ser Cys	
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Glu Asp Glu Gln Ala Arg Thr Asp Tyr Phe Ile Arg Thr Leu Leu Leu	
260 265 270	
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Glu Phe Gln Asn Glu Ser Arg Arg Leu Tyr Gln Phe His Tyr Val Asn	
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Trp Pro Asp His Asp Val Pro Ser Ser Phe Asp Ser Ile Leu Asp Met	
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Ile Ser Leu Met Arg Lys Tyr Gln Glu His Glu Asp Val Pro Ile Cys	
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Ile His Cys Ser Ala Gly Cys Gly Arg Thr Gly Ala Ile Cys Ala Ile	

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aat	gta	ttt	aat	tta	ata	caa	gaa	atg	aga	aca	caa	agg	cat	tct	gca	1104				
Asn	Val	Phe	Asn	Leu	Ile	Gln	Glu	Met	Arg	Thr	Gln	Arg	His	Ser	Ala					
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Val	Gln	Thr	Lys	Glu	Gln	Tyr	Glu	Leu	Val	His	Arg	Ala	Ile	Ala	Gln					
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Leu	Phe	Glu	Lys	Gln	Leu	Gln	Leu	Tyr	Glu	Ile	His	Gly	Ala	Gln	Lys					
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Ile	Ala	Asp	Gly	Val	Asn	Glu	Ile	Asn	Thr	Glu	Asn	Met	Ile	Ser	Ser					
			405				410						415							
ata	gag	cct	gaa	aaa	caa	gat	tct	cct	cct	cca	aaa	cca	cca	agg	acc	1296				
Ile	Glu	Pro	Glu	Lys	Gln	Asp	Ser	Pro	Pro	Pro	Lys	Pro	Pro	Arg	Thr					
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cgc	agt	tgc	ctt	gtt	gaa	ggg	gat	gct	aaa	gaa	gaa	ata	ctg	cag	cca	1344				
Arg	Ser	Cys	Leu	Val	Glu	Gly	Asp	Ala	Lys	Glu	Glu	Ile	Leu	Gln	Pro					
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Pro	Glu	Pro	His	Pro	Val	Pro	Pro	Ile	Leu	Thr	Pro	Ser	Pro	Pro	Ser					
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Pro	Lys	Pro	Val	Leu	His	Met	Val	Ser	Ser	Glu	Gln	His	Ser	Ala	Asp					
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ctc	aac	aga	aac	tat	agt	aaa	tca	aca	gaa	ctt	cca	ggg	aaa	aat	gaa	1536				
Leu	Asn	Arg	Asn	Tyr	Ser	Lys	Ser	Thr	Glu	Leu	Pro	Gly	Lys	Asn	Glu					
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Ser	Thr	Ile	Glu	Gln	Ile	Asp	Lys	Lys	Leu	Glu	Arg	Asn	Leu	Ser	Phe					
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Asn	Thr	Leu	Leu	Asn	Arg	Gly	His	Ala	Ile	Lys	Ile	Lys	Ser	Ala	Ser					
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cct	tgt	ata	gct	gat	aaa	atc	tct	aag	cca	cag	gaa	tta	agt	tca	gat	1728				
Pro	Cys	Ile	Ala	Asp	Lys	Ile	Ser	Lys	Pro	Gln	Glu	Leu	Ser	Ser	Asp					
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Leu Asn Val Gly Asp Thr Ser Gln Asn Ser Cys Val Asp Cys Ser Val	
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Thr Gln Ser Asn Lys Val Ser Val Thr Pro Pro Glu Glu Ser Gln Asn	
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Ser Asp Thr Pro Pro Arg Pro Asp Arg Leu Pro Leu Asp Glu Lys Gly	
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His Val Thr Trp Ser Phe His Gly Pro Glu Asn Ala Ile Pro Ile Pro	
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Asp Leu Ser Glu Gly Asn Ser Ser Asp Ile Asn Tyr Gln Thr Arg Lys	
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Thr Val Ser Leu Thr Pro Ser Pro Thr Thr Gln Val Glu Thr Pro Asp	
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Phe Thr Asn Pro Leu His Ser Asp Asp Ser Asp Ser Asp Glu Arg Asn	
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Val Leu Pro Met Ser Ile Ala Arg His Asn Ile Ala Gly Thr Thr His	
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Ser Gly Ala Glu Lys Asp Val Asp Val Ser Glu Asp Ser Pro Pro Pro	
755 760 765	
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Leu Pro Glu Arg Thr Pro Glu Ser Phe Val Leu Ala Ser Glu His Asn	
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Glu Gln Lys Lys Ser Glu Gly Leu Ile Thr Ser Glu Asn Glu Lys Cys	
805 810 815	
gat cat cca gcg gga ggt att cac tat gaa atg tgc ata gaa tgt cca	2496
Asp His Pro Ala Gly Gly Ile His Tyr Glu Met Cys Ile Glu Cys Pro	

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cct act ttc agt gac aag aga gaa caa ata tca gaa aat cca aca gaa			2544
Pro Thr Phe Ser Asp Lys Arg Glu Gln Ile Ser Glu Asn Pro Thr Glu			
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Ala Thr Asp Ile Gly Phe Gly Asn Arg Cys Gly Lys Pro Lys Gly Pro			
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Arg Asp Pro Pro Ser Glu Trp Thr *			
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Pro Phe Asp His Ser Arg Val Lys Leu Thr Leu Lys Thr Pro Ser Gln			
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Leu Tyr Gly Glu Asp Pro Ile Thr Phe Ala Pro Phe Lys Ile Ser Cys				
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Glu Asp Glu Gln Ala Arg Thr Asp Tyr Phe Ile Arg Thr Leu Leu Leu				
	260		265	
Glu Phe Gln Asn Glu Ser Arg Arg Leu Tyr Gln Phe His Tyr Val Asn				
	275		280	
Trp Pro Asp His Asp Val Pro Ser Ser Phe Asp Ser Ile Leu Asp Met				
	290		295	
Ile Ser Leu Met Arg Lys Tyr Gln Glu His Glu Asp Val Pro Ile Cys				
305		310		315
Ile His Cys Ser Ala Gly Cys Gly Arg Thr Gly Ala Ile Cys Ala Ile				
	325		330	
Asp Tyr Thr Trp Asn Leu Leu Lys Ala Gly Lys Ile Pro Glu Glu Phe				
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Asn Val Phe Asn Leu Ile Gln Glu Met Arg Thr Gln Arg His Ser Ala				
	355		360	
Val Gln Thr Lys Glu Gln Tyr Glu Leu Val His Arg Ala Ile Ala Gln				
	370		375	
Leu Phe Glu Lys Gln Leu Gln Leu Tyr Glu Ile His Gly Ala Gln Lys				
385		390		395
Ile Ala Asp Gly Val Asn Glu Ile Asn Thr Glu Asn Met Ile Ser Ser				
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Arg Ser Cys Leu Val Glu Gly Asp Ala Lys Glu Glu Ile Leu Gln Pro				
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Pro Glu Pro His Pro Val Pro Pro Ile Leu Thr Pro Ser Pro Pro Ser				
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Pro Lys Pro Val Leu His Met Val Ser Ser Glu Gln His Ser Ala Asp				
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Ser Thr Ile Glu Gln Ile Asp Lys Lys Leu Glu Arg Asn Leu Ser Phe				
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Pro Cys Ile Ala Asp Lys Ile Ser Lys Pro Gln Glu Leu Ser Ser Asp				
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Leu Asn Val Gly Asp Thr Ser Gln Asn Ser Cys Val Asp Cys Ser Val				
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Asn Glu Gly Met Ala Pro Pro Thr Pro Pro Lys Asn Pro Glu Glu Glu
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Gln Lys Ala Lys Ala Leu Arg Gly Arg Met Phe Val Leu Asn Glu Leu
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Val Gln Thr Glu Lys Asp Tyr Val Lys Asp Leu Gly Ile Val Val Glu
245          250          255
Gly Phe Met Lys Arg Ile Glu Glu Lys Gly Val Pro Glu Asp Met Arg
260          265          270
Gly Lys Asp Lys Ile Val Phe Gly Asn Ile His Gln Ile Tyr Asp Trp
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His Lys Asp Phe Phe Leu Ala Glu Leu Glu Lys Cys Ile Gln Glu Gln
290          295          300
Asp Arg Leu Ala Gln Leu Phe Ile Lys His Glu Arg Lys Leu His Ile
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Tyr Val Trp Tyr Cys Gln Asn Lys Pro Arg Ser Glu Tyr Ile Val Ala
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Glu	Tyr	Asp	Ala	Tyr	Phe	Glu	Glu	Val	Lys	Gln	Glu	Ile	Asn	Gln	Arg		
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Ile	Gln	Glu	Val	Ala	Pro	Glu	Phe	Leu	Val	Pro	Leu	Val	Asp	Val	Thr		
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Cys	Leu	Leu	Gly	Asp	Thr	Val	Ile	Leu	Gln	Cys	Lys	Val	Cys	Gly	Arg		
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Pro Leu Cys Pro Leu Leu Leu Val Gly Phe Ser Leu Pro Leu Ala Arg
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gct ctc agg ggc aac gag acc act gcc gac agc aac gag aca acc acg 153
Ala Leu Arg Gly Asn Glu Thr Thr Ala Asp Ser Asn Glu Thr Thr Thr
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Thr Ser Gly Pro Pro Asp Pro Gly Ala Ser Gln Pro Leu Leu Ala Trp
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Tyr Phe Phe Arg Phe Arg Lys Gln Arg Lys Ala Val Val Ser Thr Ser
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atc ccc gtg gag cac ctg gag gag gag atc cgt atc aga tcc gcc gac 441
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Ser Gln Leu Asp Gly Ile Pro Cys Ser Asp Tyr Ile Asn Ala Ser Tyr
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Lys Cys His Gln Tyr Trp Pro Asp Gln Gly Cys Trp Thr Tyr Gly Asn				
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Ile Arg Val Cys Val Glu Asp Cys Val Val Leu Val Asp Tyr Thr Ile				
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Thr	Phe	Ile	Tyr	Gln	Ala	Leu	Leu	Glu	Tyr	Tyr	Leu	Tyr	Gly	Asp	Thr
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Glu	Leu	Asp	Val	Ser	Ser	Leu	Glu	Lys	His	Leu	Gln	Thr	Met	His	Gly
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Ile	Val	Asp	Tyr	Asp	Asp	Ser	Leu	Val	Ser	Lys	Phe	Ile	Glu	Arg	Trp		
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Ala Phe Arg Asn Leu Arg Lys Gln Arg Ile Glu Ile Ser Arg Arg Gly	
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Asn Ala Gly Asp Cys Leu Ala Asn Pro Ala Val Pro Trp Gly Gln Gly	
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345 350 355	
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Gly Asn Ile Lys Phe Asp Gln Asn Gly Lys Arg Ile Asn Tyr Thr Ile	
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Asn Ile Met Glu Leu Lys Thr Asn Gly Pro Arg Lys Ile Gly Tyr Trp	
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Ser Glu Val Asp Lys Met Val Val Thr Leu Thr Glu Leu Pro Ser Gly	
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Ser Leu Gly Ile Ser Ile Met Ile Lys Lys Pro Gln Lys Ser Lys Pro	
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Pro	Arg	Ser	Leu	Ser	Gly	Arg	Ile	Val	Gly	Gly	Val	Trp	Trp	Phe	Phe	
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Leu	Ser	Glu	Gln	Gly	Val	Leu	Asp	Lys	Leu	Lys	Asn	Lys	Trp	Trp	Tyr	
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Asp Lys Gly Glu Cys Gly Ala Lys Asp Ser Gly Ser Lys Glu Lys Thr	
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Ser Ala Leu Ser Leu Ser Asn Val Ala Gly Val Phe Tyr Ile Leu Val	
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Leu Glu Val Ala Asn Ser Phe Ala Val Thr Asn Ala Phe Cys Ser Gln
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Phe Ser Arg Gly Val Tyr Ala Ile Phe Gly Phe Tyr Asp Lys Lys Ser
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Val Asn Thr Ile Thr Ser Phe Cys Gly Thr Leu His Val Ser Phe Ile
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Thr Pro Ser Phe Pro Thr Asp Gly Thr His Pro Phe Val Ile Gln Met
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Arg Pro Asp Leu Lys Gly Ala Leu Leu Ser Leu Ile Glu Tyr Tyr Gln
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Trp Asp Lys Phe Ala Tyr Leu Tyr Asp Ser Asp Arg Gly Leu Ser Thr
145 150 155 160
Leu Gln Ala Val Leu Asp Ser Ala Ala Glu Lys Lys Trp Gln Val Thr





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Pro Gly Lys	Asp Glu	Gln Val	Pro Ile	Arg Val	Val Gln	Val Leu	Gly								
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atg gtg ggc	aca gcc	ctg ctg	gcc tct	ctg tgg	cac cat	gtg gcc	cca	760							
Met Val Gly	Thr Ala	Leu Leu	Ala Ala Ser	Leu Trp	His His	Val Ala	Pro								
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Val Ala Gly	Gln Leu	His Ser	Val Ala	Phe Leu	Ala Leu	Ala Phe	Val								
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Thr Ala Leu	Leu Val	Ala Ser	Ala Ala	Phe Gln	Gly Leu	Leu Leu									
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Asp Pro Lys	Ala Tyr	Gln Leu	Leu Ser	Ala Arg	Ser Ala	Cys Leu	Leu								
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Pro Cys Pro Pro Leu Val Gly Thr Ser Ala Gly Val Val Leu Val Val	
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380 385 390	
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Ala Ser Ser Leu Leu His Gly Gly Gly Arg Pro Ala Leu Leu Ala Ala	
395 400 405	
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Pro Pro Thr Ser Ile Tyr His Val Phe His Ser Arg Lys Asp Cys Ala	
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100 105 110	

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Asn	Val	Thr	Phe	Leu	Pro	Phe	Leu	Ser	His	Leu	Pro	Pro	Arg	Phe	Leu	130	135	140
Arg	Ser	Phe	Phe	Leu	Gly	Gln	Gly	Leu	Ser	Ala	Leu	Leu	Pro	Cys	Val	145	150	155
Leu	Ala	Leu	Val	Gln	Gly	Val	Gly	Arg	Leu	Glu	Cys	Pro	Pro	Ala	Pro	165	170	175
Ile	Asn	Gly	Thr	Pro	Gly	Pro	Pro	Leu	Asp	Phe	Leu	Glu	Arg	Phe	Pro	180	185	190
Ala	Ser	Thr	Phe	Phe	Trp	Ala	Leu	Thr	Ala	Leu	Leu	Val	Ala	Ser	Ala	195	200	205
Ala	Ala	Phe	Gln	Gly	Leu	Leu	Leu	Leu	Pro	Pro	Pro	Pro	Pro	Ser	Val	210	215	220
Pro	Thr	Gly	Glu	Leu	Gly	Ser	Gly	Leu	Gln	Val	Gly	Ala	Pro	Gly	Ala	225	230	235
Glu	Glu	Glu	Val	Glu	Glu	Ser	Ser	Pro	Leu	Gln	Glu	Pro	Pro	Ser	Gln	245	250	255
Ala	Ala	Gly	Thr	Thr	Pro	Gly	Pro	Asp	Pro	Lys	Ala	Tyr	Gln	Leu	Leu	260	265	270
Ser	Ala	Arg	Ser	Ala	Cys	Leu	Leu	Gly	Leu	Leu	Ala	Ala	Thr	Asn	Ala	275	280	285
Leu	Thr	Asn	Gly	Val	Leu	Pro	Ala	Val	Gln	Ser	Phe	Ser	Cys	Leu	Pro	290	295	300
Tyr	Gly	Arg	Leu	Ala	Tyr	His	Leu	Ala	Val	Val	Leu	Gly	Ser	Ala	Ala	305	310	315
Asn	Pro	Leu	Ala	Cys	Phe	Leu	Ala	Met	Gly	Val	Leu	Cys	Arg	Ser	Leu	325	330	335
Ala	Gly	Leu	Gly	Gly	Leu	Ser	Leu	Leu	Gly	Val	Phe	Cys	Gly	Gly	Tyr	340	345	350
Leu	Met	Ala	Leu	Ala	Val	Leu	Ser	Pro	Cys	Pro	Pro	Leu	Val	Gly	Thr	355	360	365
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Val	Phe	Ser	Tyr	Val	Lys	Val	Ala	Ala	Ser	Ser	Leu	Leu	His	Gly	Gly	385	390	395
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<212> DNA

<213> Homo Sapiens

<220>

<221> CDS

<222> (367)...(1770)

<400> 105

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tcttcttacc gcgaagaagc caggggaata ggtagccaca tcttgtttgc agataagaaa 180
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atacaagcag ctaaaaatga cacagcttat ttaccatgcc cctgacactg cactgagcac 300
tttatgagct tgaactctgt taatctcacg accacctcat gagactctcc agaaagagca 360
acagta atg gag tac atg agc act gga agt gac aat aaa gaa gag att 408
Met Glu Tyr Met Ser Thr Gly Ser Asp Asn Lys Glu Glu Ile

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1				5				10								
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gaa	aat	ctt	tat	gca	agt	gaa	gag	cca	gca	gtt	tat	gaa	ccc	agt	cta	504
Glu	Asn	Leu	Tyr	Ala	Ser	Glu	Glu	Pro	Ala	Val	Tyr	Glu	Pro	Ser	Leu	
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atg	acc	atg	tgt	caa	gac	agt	aat	caa	aac	gat	gag	cgt	tct	aag	tct	552
Met	Thr	Met	Cys	Gln	Asp	Ser	Asn	Gln	Asn	Asp	Glu	Arg	Ser	Lys	Ser	
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Gly	Thr	Val	Glu	Asp	Leu	Leu	Ala	Phe	Ala	Asn	His	Ile	Ser	Asn	Thr	
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Val	Leu	Leu	Ile	Pro	Trp	Lys	Leu	Thr	Tyr	Arg	Asn	Ile	Gly	Ser	Asp	
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Phe	Ile	Pro	Arg	Gly	Ala	Phe	Gly	Lys	Val	Tyr	Leu	Ala	Gln	Asp	Ile	
		145					150					155				
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Lys	Thr	Lys	Lys	Arg	Met	Ala	Cys	Lys	Leu	Ile	Pro	Val	Asp	Gln	Phe	
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Lys	Pro	Ser	Asp	Val	Glu	Ile	Gln	Ala	Cys	Phe	Arg	His	Glu	Asn	Ile	
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Ala	Glu	Leu	Tyr	Gly	Ala	Val	Leu	Trp	Gly	Glu	Thr	Val	His	Leu	Phe	
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Met	Glu	Ala	Gly	Glu	Gly	Gly	Ser	Val	Leu	Glu	Lys	Leu	Glu	Ser	Cys	
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Gly	Pro	Met	Arg	Glu	Phe	Glu	Ile	Ile	Trp	Val	Thr	Lys	His	Val	Leu	
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Lys	Gly	Leu	Asp	Phe	Leu	His	Ser	Lys	Lys	Val	Ile	His	His	Asp	Ile	
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Phe Gly Leu Ser Val Gln Met Thr Glu Asp Val Tyr Phe Pro Lys Asp	
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Leu Arg Gly Thr Glu Ile Tyr Met Ser Pro Glu Val Ile Leu Cys Arg	
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Gly His Ser Thr Lys Ala Asp Ile Tyr Ser Leu Gly Ala Thr Leu Ile	
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His Met Gln Thr Gly Thr Pro Pro Trp Val Lys Arg Tyr Pro Arg Ser	
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gcc tat ccc tcc tac ctg tac ata atc cac aag caa gca cct cca ctg	1416
Ala Tyr Pro Ser Tyr Leu Tyr Ile Ile His Lys Gln Ala Pro Pro Leu	
335 340 345 350	
gaa gac att gca gat gac tgc agt cca ggg atg aga gag ctg ata gaa	1464
Glu Asp Ile Ala Asp Asp Cys Ser Pro Gly Met Arg Glu Leu Ile Glu	
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gct tcc ctg gag aga aac ccc aat cac cgc cca aga gcc gca gac cta	1512
Ala Ser Leu Glu Arg Asn Pro Asn His Arg Pro Arg Ala Ala Asp Leu	
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Leu Lys His Glu Ala Leu Asn Pro Pro Arg Glu Asp Gln Pro Arg Cys	
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Thr Ser Leu Asp Ser Ala Leu Leu Glu Arg Lys Arg Leu Leu Ser Arg	
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Lys Glu Leu Glu Leu Pro Glu Asn Ile Ala Asp Ser Ser Cys Thr Gly	
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Ser Thr Glu Glu Ser Glu Met Leu Lys Arg Gln Arg Ser Leu Tyr Ile	
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Thr Leu Glu Tyr Gly *	
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ctt

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 <213> Homo Sapiens

<400> 106

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35     40     45
Met Cys Gln Asp Ser Asn Gln Asn Asp Glu Arg Ser Lys Ser Leu Leu
50     55     60
Leu Ser Gly Gln Glu Val Pro Trp Leu Ser Ser Val Arg Tyr Gly Thr
65     70     75     80
Val Glu Asp Leu Leu Ala Phe Ala Asn His Ile Ser Asn Thr Ala Lys
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His Phe Tyr Gly Gln Arg Pro Gln Glu Ser Gly Ile Leu Leu Asn Met
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Val Ile Thr Pro Gln Asn Gly Arg Tyr Gln Ile Asp Ser Asp Val Leu
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Leu Ile Pro Trp Lys Leu Thr Tyr Arg Asn Ile Gly Ser Asp Phe Ile
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Pro Arg Gly Ala Phe Gly Lys Val Tyr Leu Ala Gln Asp Ile Lys Thr
145    150    155    160
Lys Lys Arg Met Ala Cys Lys Leu Ile Pro Val Asp Gln Phe Lys Pro
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Ser Asp Val Glu Ile Gln Ala Cys Phe Arg His Glu Asn Ile Ala Glu
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195    200    205
Ala Gly Glu Gly Gly Ser Val Leu Glu Lys Leu Glu Ser Cys Gly Pro
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Met Arg Glu Phe Glu Ile Trp Val Thr Lys His Val Leu Lys Gly
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245    250    255
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Pro Ser Tyr Leu Tyr Ile Ile His Lys Gln Ala Pro Pro Leu Glu Asp
340    345    350

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 His Glu Ala Leu Asn Pro Pro Arg Glu Asp Gln Pro Arg Cys Thr Ser  
 385 390 395 400  
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 Glu Glu Ser Glu Met Leu Lys Arg Gln Arg Ser Leu Tyr Ile Asp Leu  
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 Glu Tyr Ile Lys Asn Trp Arg Pro Arg Tyr Phe Leu Leu Lys Thr Asp  
 20 25 30  
 ggc tca ttc ata gga tat aaa gag aaa cct caa gat gtg gat tta cct 144  
 Gly Ser Phe Ile Gly Tyr Lys Glu Lys Pro Gln Asp Val Asp Leu Pro  
 35 40 45  
 tat ccc ctc aac aac ttt tca gtg gca aaa tgc cag tta atg aaa aca 192  
 Tyr Pro Leu Asn Asn Phe Ser Val Ala Lys Cys Gln Leu Met Lys Thr  
 50 55 60  
 gaa cga cca aag cca aac aca ttt ata atc aga tgt ctc cag tgg act 240  
 Glu Arg Pro Lys Pro Asn Thr Phe Ile Ile Arg Cys Leu Gln Trp Thr  
 65 70 75 80  
 act gtt ata gag aga aca ttt cat gta gat act cca gag gaa agg gaa 288  
 Thr Val Ile Glu Arg Thr Phe His Val Asp Thr Pro Glu Glu Arg Glu  
 85 90 95  
 gaa tgg aca gaa gct atc cag gct gta gca gac aga ctg cag agg caa 336  
 Glu Trp Thr Glu Ala Ile Gln Ala Val Ala Asp Arg Leu Gln Arg Gln  
 100 105 110  
 gaa gag gag aga atg aat tgt agt cca act tca caa att gat aat ata 384  
 Glu Glu Glu Arg Met Asn Cys Ser Pro Thr Ser Gln Ile Asp Asn Ile  
 115 120 125  
 gga gag gaa gag atg gat gcc tct aca acc cat cat aaa aga aag aca 432  
 Gly Glu Glu Glu Met Asp Ala Ser Thr Thr His His Lys Arg Lys Thr

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aag att ctg aag aaa gaa gtc att att gca aag gat gaa gtg gca cac Lys Ile Leu Lys Lys Glu Val Ile Ile Ala Lys Asp Glu Val Ala His 180 185 190			576
act cta act gaa agc aga gta tta aag aac act aga cat ccc ttt tta Thr Leu Thr Glu Ser Arg Val Leu Lys Asn Thr Arg His Pro Phe Leu 195 200 205			624
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cgg gtg ttc tct gag gac cgc aca cgt ttc tat ggt gca gaa att gtc Arg Val Phe Ser Glu Asp Arg Thr Arg Phe Tyr Gly Ala Glu Ile Val 245 250 255			768
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 Lys Leu Val Pro Pro Phe Lys Pro Gln Val Thr Ser Glu Thr Asp Thr  
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 Arg Tyr Phe Asp Glu Glu Phe Thr Ala Gln Thr Ile Thr Ile Thr Pro  
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cct gaa aaa tat gat gag gat ggt atg gac tgc atg gac aat gag agg 1392  
 Pro Glu Lys Tyr Asp Glu Asp Gly Met Asp Cys Met Asp Asn Glu Arg  
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 Arg Pro His Phe Pro Gln Phe Ser Tyr Ser Ala Ser Gly Arg Glu \*  
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 35 40 45  
 Tyr Pro Leu Asn Asn Phe Ser Val Ala Lys Cys Gln Leu Met Lys Thr  
 50 55 60

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Glu	Glu	Glu	Arg	Met	Asn	Cys	Ser	Pro	Thr	Ser	Gln	Ile	Asp	Asn	Ile	115	120	125	
Gly	Glu	Glu	Glu	Met	Asp	Ala	Ser	Thr	Thr	His	His	Lys	Arg	Lys	Thr	130	135	140	
Met	Asn	Asp	Phe	Asp	Tyr	Leu	Lys	Leu	Leu	Gly	Lys	Gly	Thr	Phe	Gly	145	150	155	160
Lys	Val	Ile	Leu	Val	Arg	Glu	Lys	Ala	Ser	Gly	Lys	Tyr	Tyr	Ala	Met	165	170	175	
Lys	Ile	Leu	Lys	Lys	Glu	Val	Ile	Ile	Ala	Lys	Asp	Glu	Val	Ala	His	180	185	190	
Thr	Leu	Thr	Glu	Ser	Arg	Val	Leu	Lys	Asn	Thr	Arg	His	Pro	Phe	Leu	195	200	205	
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Asp	Phe	Gly	Leu	Cys	Lys	Glu	Gly	Ile	Thr	Asp	Ala	Ala	Thr	Met	Lys	290	295	300	
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Asn	Asp	Tyr	Gly	Arg	Ala	Val	Asp	Trp	Trp	Gly	Leu	Gly	Val	Val	Met	325	330	335	
Tyr	Glu	Met	Met	Cys	Gly	Arg	Leu	Pro	Phe	Tyr	Asn	Gln	Asp	His	Glu	340	345	350	
Lys	Leu	Phe	Glu	Leu	Ile	Leu	Met	Glu	Asp	Ile	Lys	Phe	Pro	Arg	Thr	355	360	365	
Leu	Ser	Ser	Asp	Ala	Lys	Ser	Leu	Leu	Ser	Gly	Leu	Leu	Ile	Lys	Asp	370	375	380	
Pro	Asn	Lys	Arg	Leu	Gly	Gly	Gly	Pro	Asp	Asp	Ala	Lys	Glu	Ile	Met	385	390	395	400
Arg	His	Ser	Phe	Phe	Ser	Gly	Val	Asn	Trp	Gln	Asp	Val	Tyr	Asp	Lys	405	410	415	
Lys	Leu	Val	Pro	Pro	Phe	Lys	Pro	Gln	Val	Thr	Ser	Glu	Thr	Asp	Thr	420	425	430	
Arg	Tyr	Phe	Asp	Glu	Glu	Phe	Thr	Ala	Gln	Thr	Ile	Thr	Ile	Thr	Pro	435	440	445	
Pro	Glu	Lys	Tyr	Asp	Glu	Asp	Gly	Met	Asp	Cys	Met	Asp	Asn	Glu	Arg	450	455	460	
Arg	Pro	His	Phe	Pro	Gln	Phe	Ser	Tyr	Ser	Ala	Ser	Gly	Arg	Glu		465	470	475	

<210> 109

<211> 3941

<212> DNA

<213> Homo Sapiens

<220>

<221> CDS

<222> (213)...(1748)

<221> misc\_feature

<222> (1)...(3941)

<223> n = A,T,C or G

<400> 109

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ccacccttaa atctgtaggt tttcactccc ccactctcct ttgcagtccc gtggagtctc 180
catctgagcc ctttcttagt ccaggcatcc cg atg ttg gtg gat ggc cca tct 233
                               Met Leu Val Asp Gly Pro Ser
                               1           5
```

```
gag cgg cca gcc ctg tgc ttc ttg ctg ttg gct gtg gca atg tct ttc 281
Glu Arg Pro Ala Leu Cys Phe Leu Leu Leu Ala Val Ala Met Ser Phe
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```

```
ttc ggc tca gct cta tcc ata gat gaa aca cgg gcg cat ctg ttg ttg 329
Phe Gly Ser Ala Leu Ser Ile Asp Glu Thr Arg Ala His Leu Leu Leu
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```
aaa gaa aag atg atg cgg ctc ggg ggg cgg ctg gtg ctg aac acc aag 377
Lys Glu Lys Met Met Arg Leu Gly Gly Arg Leu Val Leu Asn Thr Lys
                40                45                50                55
```

```
gag gag ctg gcc aat gag agg ctc atg acg ctc aaa atc gct gag atg 425
Glu Glu Leu Ala Asn Glu Arg Leu Met Thr Leu Lys Ile Ala Glu Met
                60                65                70
```

```
aag gag gcc atg agg acc ctg ata ttc cca ccc agc atg cac ttt ttc 473
Lys Glu Ala Met Arg Thr Leu Ile Phe Pro Pro Ser Met His Phe Phe
                75                80                85
```

```
cag gcc aag cat ctc att gag aga agt caa gtg ttt aat att cta agg 521
Gln Ala Lys His Leu Ile Glu Arg Ser Gln Val Phe Asn Ile Leu Arg
                90                95                100
```

```
atg atg cca aaa ggg gct gcc ttg cac ctc cat gac att ggc atc gtg 569
Met Met Pro Lys Gly Ala Leu His Leu His Asp Ile Gly Ile Val
                105                110                115
```

```
act atg gac tgg ctg gtg agg aat gtc acc tac agg cct cac tgc cac 617
Thr Met Asp Trp Leu Val Arg Asn Val Thr Tyr Arg Pro His Cys His
                120                125                130                135
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```
atc tgt ttc acc cca agg ggg atc atg cag ttc aga ttt gct cac cca 665
Ile Cys Phe Thr Pro Arg Gly Ile Met Gln Phe Arg Phe Ala His Pro
                140                145                150
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```
act ccc cgt cca tca gaa aaa tgt tcc aag tgg att ctg ctg gag gat 713
Thr Pro Arg Pro Ser Glu Lys Cys Ser Lys Trp Ile Leu Leu Glu Asp
                155                160                165
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```
tat cgg aag cgg gtg cag aac gtc act gag ttt gat gac agc ttg ctg 761
Tyr Arg Lys Arg Val Gln Asn Val Thr Glu Phe Asp Asp Ser Leu Leu
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agg aat ttc act ctg gtg acc cag cac ccg gag gtg att tac aca aac 809
Arg Asn Phe Thr Leu Val Thr Gln His Pro Glu Val Ile Tyr Thr Asn
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```

```
caa aat gtt gtc tgg tcg aaa ttt gaa acc atc ttc ttc acc atc tct 857
```

Gln	Asn	Val	Val	Trp	Ser	Lys	Phe	Glu	Thr	Ile	Phe	Phe	Thr	Ile	Ser		
200					205					210					215		
ggc	ctc	atc	cat	tac	gca	cca	gtg	ttc	aga	gac	tat	gtc	ttc	cgg	agc	905	
Gly	Leu	Ile	His	Tyr	Ala	Pro	Val	Phe	Arg	Asp	Tyr	Val	Phe	Arg	Ser		
				220					225					230			
atg	cag	gag	ttc	tac	gag	gac	aac	gtg	ctc	tac	atg	gag	atc	aga	gcc	953	
Met	Gln	Glu	Phe	Tyr	Glu	Asp	Asn	Val	Leu	Tyr	Met	Glu	Ile	Arg	Ala		
			235					240					245				
agg	ctg	ctg	ccg	gtg	tat	gag	ctc	agt	gga	gag	cac	cat	gac	gaa	gag	1001	
Arg	Leu	Leu	Pro	Val	Tyr	Glu	Leu	Ser	Gly	Glu	His	His	Asp	Glu	Glu		
		250					255					260					
tgg	tca	gtg	aag	act	tac	cag	gaa	gta	gct	cag	aag	ttt	gtg	gaa	act	1049	
Trp	Ser	Val	Lys	Thr	Tyr	Gln	Glu	Val	Ala	Gln	Lys	Phe	Val	Glu	Thr		
	265					270					275						
cac	cct	gag	ttt	att	gga	atc	aaa	atc	att	tat	tcg	gat	cac	aga	tcc	1097	
His	Pro	Glu	Phe	Ile	Gly	Ile	Lys	Ile	Ile	Tyr	Ser	Asp	His	Arg	Ser		
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aaa	gat	gtg	gct	gtc	atc	gca	gaa	tcc	atc	cga	atg	gcc	atg	ggg	ctc	1145	
Lys	Asp	Val	Ala	Val	Ile	Ala	Glu	Ser	Ile	Arg	Met	Ala	Met	Gly	Leu		
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cga	atc	aag	ttc	ccc	acg	gtg	gtg	gca	ggg	ttt	gac	ctg	gtg	ggg	cat	1193	
Arg	Ile	Lys	Phe	Pro	Thr	Val	Val	Ala	Gly	Phe	Asp	Leu	Val	Gly	His		
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Glu	Asp	Thr	Gly	His	Ser	Leu	Arg	Asp	Tyr	Lys	Glu	Ala	Leu	Met	Ile		
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ccc	gcc	aag	gat	ggc	gtt	aag	ctg	cct	tac	ttc	ttc	cac	gcc	gga	gaa	1289	
Pro	Ala	Lys	Asp	Gly	Val	Lys	Leu	Pro	Tyr	Phe	Phe	His	Ala	Gly	Glu		
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Thr	Asp	Trp	Gln	Gly	Thr	Ser	Ile	Asp	Arg	Asn	Ile	Leu	Asp	Ala	Leu		
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atg	ctg	aac	act	acc	aga	atc	ggc	cat	gga	ttt	gct	ttg	agc	aaa	cac	1385	
Met	Leu	Asn	Thr	Thr	Arg	Ile	Gly	His	Gly	Phe	Ala	Leu	Ser	Lys	His		
				380				385						390			
ccc	gca	gtc	agg	act	tac	tcc	tgg	aaa	aag	gac	atc	ccc	ata	gaa	gtc	1433	
Pro	Ala	Val	Arg	Thr	Tyr	Ser	Trp	Lys	Lys	Asp	Ile	Pro	Ile	Glu	Val		
			395					400					405				
tgt	ccc	atc	tct	aac	cag	gtg	ctg	aaa	ctg	gtg	tct	gac	ttg	agg	aac	1481	
Cys	Pro	Ile	Ser	Asn	Gln	Val	Leu	Lys	Leu	Val	Ser	Asp	Leu	Arg	Asn		
		410					415					420					
cac	cct	gta	gcc	act	ctg	atg	gcc	act	ggg	cac	ccc	atg	gtg	atc	agc	1529	
His	Pro	Val	Ala	Thr	Leu	Met	Ala	Thr	Gly	His	Pro	Met	Val	Ile	Ser		
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tct	gat	gac	cca	gct	atg	ttt	ggc	gcc	aaa	ggc	ttg	tcc	tat	gat	ttc	1577	
Ser	Asp	Asp	Pro	Ala	Met	Phe	Gly	Ala	Lys	Gly	Leu	Ser	Tyr	Asp	Phe		
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Tyr Glu Val Phe Met Gly Ile Gly Gly Met Lys Ala Asp Leu Arg Thr	
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ctc aaa cag ctg gcc atg aac tct atc aag tac agt acc ctg ttg gag	1673
Leu Lys Gln Leu Ala Met Asn Ser Ile Lys Tyr Ser Thr Leu Leu Glu	
475 480 485	

agt gag aaa aat act ttc atg gaa atc tgg aag aag aga tgg gat aag	1721
Ser Glu Lys Asn Thr Phe Met Glu Ile Trp Lys Lys Arg Trp Asp Lys	
490 495 500	

ttc ata gca gat gtg gct aca aag tga ggagaagcta gccagccctc	1768
Phe Ile Ala Asp Val Ala Thr Lys *	
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<211> 511

<212> PRT

<213> Homo Sapiens

<400> 110

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Thr	Arg	Ala	His	Leu	Leu	Leu	Lys	Glu	Lys	Met	Met	Arg	Leu	Gly	Gly
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Thr	Leu	Lys	Ile	Ala	Glu	Met	Lys	Glu	Ala	Met	Arg	Thr	Leu	Ile	Phe
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Pro	Pro	Ser	Met	His	Phe	Phe	Gln	Ala	Lys	His	Leu	Ile	Glu	Arg	Ser
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Gln	Val	Phe	Asn	Ile	Leu	Arg	Met	Met	Pro	Lys	Gly	Ala	Ala	Leu	His
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Leu	His	Asp	Ile	Gly	Ile	Val	Thr	Met	Asp	Trp	Leu	Val	Arg	Asn	Val
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Lys	Trp	Ile	Leu	Leu	Glu	Asp	Tyr	Arg	Lys	Arg	Val	Gln	Asn	Val	Thr
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Glu	Phe	Asp	Asp	Ser	Leu	Leu	Arg	Asn	Phe	Thr	Leu	Val	Thr	Gln	His
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Pro	Glu	Val	Ile	Tyr	Thr	Asn	Gln	Asn	Val	Val	Trp	Ser	Lys	Phe	Glu
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Thr	Ile	Phe	Phe	Thr	Ile	Ser	Gly	Leu	Ile	His	Tyr	Ala	Pro	Val	Phe
		210				215					220				
Arg	Asp	Tyr	Val	Phe	Arg	Ser	Met	Gln	Glu	Phe	Tyr	Glu	Asp	Asn	Val
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Leu	Tyr	Met	Glu	Ile	Arg	Ala	Arg	Leu	Leu	Pro	Val	Tyr	Glu	Leu	Ser
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Gly	Glu	His	His	Asp	Glu	Glu	Trp	Ser	Val	Lys	Thr	Tyr	Gln	Glu	Val
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Ala	Gln	Lys	Phe	Val	Glu	Thr	His	Pro	Glu	Phe	Ile	Gly	Ile	Lys	Ile
			275				280					285			
Ile	Tyr	Ser	Asp	His	Arg	Ser	Lys	Asp	Val	Ala	Val	Ile	Ala	Glu	Ser
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Ile	Arg	Met	Ala	Met	Gly	Leu	Arg	Ile	Lys	Phe	Pro	Thr	Val	Val	Ala
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Gly	Phe	Asp	Leu	Val	Gly	His	Glu	Asp	Thr	Gly	His	Ser	Leu	Arg	Asp
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Tyr	Lys	Glu	Ala	Leu	Met	Ile	Pro	Ala	Lys	Asp	Gly	Val	Lys	Leu	Pro
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Tyr	Phe	Phe	His	Ala	Gly	Glu	Thr	Asp	Trp	Gln	Gly	Thr	Ser	Ile	Asp
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Arg	Asn	Ile	Leu	Asp	Ala	Leu	Met	Leu	Asn	Thr	Thr	Arg	Ile	Gly	His
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Gly	Phe	Ala	Leu	Ser	Lys	His	Pro	Ala	Val	Arg	Thr	Tyr	Ser	Trp	Lys
385					390					395					400
Lys	Asp	Ile	Pro	Ile	Glu	Val	Cys	Pro	Ile	Ser	Asn	Gln	Val	Leu	Lys
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Leu	Val	Ser	Asp	Leu	Arg	Asn	His	Pro	Val	Ala	Thr	Leu	Met	Ala	Thr
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Gly	His	Pro	Met	Val	Ile	Ser	Ser	Asp	Asp	Pro	Ala	Met	Phe	Gly	Ala
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Lys	Gly	Leu	Ser	Tyr	Asp	Phe	Tyr	Glu	Val	Phe	Met	Gly	Ile	Gly	Gly
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Met	Lys	Ala	Asp	Leu	Arg	Thr	Leu	Lys	Gln	Leu	Ala	Met	Asn	Ser	Ile
465					470					475					480
Lys	Tyr	Ser	Thr	Leu	Leu	Glu	Ser	Glu	Lys	Asn	Thr	Phe	Met	Glu	Ile
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500

505

510

<210> 111  
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<220>  
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 Trp Val Pro Glu Glu Gly Glu Lys Leu Asp Gln Glu Asp Glu Asp Gln  
 20 25 30  
 gtg aag gat cgg ggc caa tgg acc aac aag atg gag ttt gtg ctg tca 204  
 Val Lys Asp Arg Gly Gln Trp Thr Asn Lys Met Glu Phe Val Leu Ser  
 35 40 45  
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 Val Ala Gly Glu Ile Ile Gly Leu Gly Asn Val Trp Arg Phe Pro Tyr  
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 180 185 190

gag aga cga gtt ctg ggc atc acc tcg ggc atc cat gac ctg ggc tcc	684
Glu Arg Arg Val Leu Gly Ile Thr Ser Gly Ile His Asp Leu Gly Ser	
195 200 205	
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Leu Arg Trp Glu Leu Ala Leu Cys Leu Leu Leu Ala Trp Val Ile Cys	
210 215 220	
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Tyr Phe Cys Ile Trp Lys Gly Val Lys Ser Thr Gly Lys Val Val Tyr	
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Phe Thr Ala Thr Phe Pro Tyr Leu Met Leu Val Ile Leu Leu Ile Arg	
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Pro Asp Leu Phe Arg Leu Lys Asp Pro Gln Val Trp Met Asp Ala Gly	
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Thr Gln Ile Phe Phe Ser Phe Ala Ile Cys Gln Gly Cys Leu Thr Ala	
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Leu Gly Ser Tyr Asn Lys Tyr His Asn Asn Cys Tyr Lys Asp Cys Ile	
305 310 315 320	
gcc ctc tgc ttc ctg aac agt gcc acc agc ttt gtg gct ggg ttt gtt	1068
Ala Leu Cys Phe Leu Asn Ser Ala Thr Ser Phe Val Ala Gly Phe Val	
325 330 335	
gtc ttc tcc atc ctg ggc ttc atg tcc caa gag caa ggg gtg ccc att	1116
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Ser Glu Val Ala Glu Ser Gly Pro Gly Leu Ala Phe Ile Ala Phe Pro	
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Lys Ala Val Thr Met Met Pro Leu Ser Gln Leu Trp Ser Cys Leu Phe	
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Glu Cys Leu Val Thr Ala Ser Ile Asp Met Phe Pro Arg Gln Leu Arg	
405 410 415	
aag agc ggg cgg cgc gag ctc ctc atc ctc acc atc gcc gtc atg tgc	1356
Lys Ser Gly Arg Arg Glu Leu Leu Ile Leu Thr Ile Ala Val Met Cys	
420 425 430	
tac ctg ata ggg ctt ttc ctg gtc acc gag ggc ggg atg tac atc ttc	1404
Tyr Leu Ile Gly Leu Phe Leu Val Thr Glu Gly Gly Met Tyr Ile Phe	

435					440					445							
cag	ctg	ttt	gac	tac	tat	gct	tcc	agt	ggc	ata	tgc	ctg	ctg	ttc	ctg	1452	
Gln	Leu	Phe	Asp	Tyr	Tyr	Ala	Ser	Ser	Gly	Ile	Cys	Leu	Leu	Phe	Leu		
450					455					460							
tca	ttg	ttt	gaa	gtg	gtc	tgc	ata	agc	tgg	gtg	tat	ggg	gcg	gac	cgt	1500	
Ser	Leu	Phe	Glu	Val	Val	Cys	Ile	Ser	Trp	Val	Tyr	Gly	Ala	Asp	Arg		
465					470					475					480		
ttc	tat	gac	aac	att	gag	gac	atg	att	ggc	tac	cgg	cca	tgg	ccc	ctg	1548	
Phe	Tyr	Asp	Asn	Ile	Glu	Asp	Met	Ile	Gly	Tyr	Arg	Pro	Trp	Pro	Leu		
485					490					495							
gtg	aag	atc	tcc	tgg	ctc	ttc	ctg	acc	cct	gga	ctt	tgc	ctg	gcc	act	1596	
Val	Lys	Ile	Ser	Trp	Leu	Phe	Leu	Thr	Pro	Gly	Leu	Cys	Leu	Ala	Thr		
500					505					510							
ttc	ctc	ttc	tcc	ttg	agc	aag	tac	acc	ccc	ctc	aag	tac	aac	aac	gtc	1644	
Phe	Leu	Phe	Ser	Leu	Ser	Lys	Tyr	Thr	Pro	Leu	Lys	Tyr	Asn	Asn	Val		
515					520					525							
tat	gtg	tac	cgg	ccc	tgg	gga	tac	tcc	att	ggc	tgg	ttc	ctg	gct	ctg	1692	
Tyr	Val	Tyr	Pro	Pro	Trp	Gly	Tyr	Ser	Ile	Gly	Trp	Phe	Leu	Ala	Leu		
530					535					540							
tcc	tcc	atg	gtc	tgt	gtc	cca	ctc	ttc	gtc	gtc	atc	acc	ctc	ctg	aag	1740	
Ser	Ser	Met	Val	Cys	Val	Pro	Leu	Phe	Val	Val	Ile	Thr	Leu	Leu	Lys		
545					550					555					560		
act	cgg	ggt	cct	ttc	agg	aag	cgt	ctg	cgt	cag	ctc	atc	acc	cct	gac	1788	
Thr	Arg	Gly	Pro	Phe	Arg	Lys	Arg	Leu	Arg	Gln	Leu	Ile	Thr	Pro	Asp		
565					570					575							
tcc	agt	ctg	cca	cag	ccc	aag	caa	cat	ccc	tgc	ttg	gat	ggc	agt	gct	1836	
Ser	Ser	Leu	Pro	Gln	Pro	Lys	Gln	His	Pro	Cys	Leu	Asp	Gly	Ser	Ala		
580					585					590							
ggc	cgg	aac	ttt	ggg	ccc	tcc	cca	aca	agg	gaa	gga	ctg	ata	gcc	ggg	1884	
Gly	Arg	Asn	Phe	Gly	Pro	Ser	Pro	Thr	Arg	Glu	Gly	Leu	Ile	Ala	Gly		
595					600					605							
gag	aag	gag	acc	cat	ttg	tag	ggtgtgacca	gaggc								1920	
Glu	Lys	Glu	Thr	His	Leu	*											
610																	

<210> 112  
 <211> 614  
 <212> PRT  
 <213> Homo Sapiens

<400> 112  
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 Trp Val Pro Glu Gly Glu Lys Leu Asp Gln Glu Asp Glu Asp Gln  
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 Val Lys Asp Arg Gly Gln Trp Thr Asn Lys Met Glu Phe Val Leu Ser  
 35 40 45  
 Val Ala Gly Glu Ile Ile Gly Leu Gly Asn Val Trp Arg Phe Pro Tyr  
 50 55 60  
 Leu Cys Tyr Lys Asn Gly Gly Gly Ala Phe Phe Ile Pro Tyr Phe Ile

65					70					75				80
Phe	Phe	Phe	Val	Cys	Gly	Ile	Pro	Val	Phe	Phe	Leu	Glu	Val	Ala
				85					90					95
Gly	Gln	Tyr	Thr	Ser	Gln	Gly	Ser	Val	Thr	Ala	Trp	Arg	Lys	Ile
			100					105					110	
Pro	Leu	Phe	Gln	Gly	Ile	Gly	Leu	Ala	Ser	Val	Val	Ile	Glu	Ser
		115					120					125		
Leu	Asn	Val	Tyr	Tyr	Ile	Ile	Ile	Leu	Ala	Trp	Ala	Leu	Phe	Tyr
	130					135					140			
Phe	Ser	Ser	Phe	Thr	Ser	Glu	Leu	Pro	Trp	Thr	Thr	Cys	Asn	Asn
	145				150					155				160
Trp	Asn	Thr	Glu	His	Cys	Thr	Asp	Phe	Leu	Asn	His	Ser	Gly	Ala
				165					170					175
Thr	Val	Thr	Pro	Phe	Glu	Asn	Phe	Thr	Ser	Pro	Val	Met	Glu	Phe
			180					185					190	
Glu	Arg	Arg	Val	Leu	Gly	Ile	Thr	Ser	Gly	Ile	His	Asp	Leu	Gly
	195						200					205		
Leu	Arg	Trp	Glu	Leu	Ala	Leu	Cys	Leu	Leu	Leu	Ala	Trp	Val	Ile
	210					215					220			
Tyr	Phe	Cys	Ile	Trp	Lys	Gly	Val	Lys	Ser	Thr	Gly	Lys	Val	Val
	225				230					235				240
Phe	Thr	Ala	Thr	Phe	Pro	Tyr	Leu	Met	Leu	Val	Ile	Leu	Leu	Ile
				245					250					255
Gly	Val	Thr	Leu	Pro	Gly	Ala	Tyr	Gln	Gly	Ile	Ile	Tyr	Tyr	Leu
			260				265						270	
Pro	Asp	Leu	Phe	Arg	Leu	Lys	Asp	Pro	Gln	Val	Trp	Met	Asp	Ala
	275						280					285		
Thr	Gln	Ile	Phe	Phe	Ser	Phe	Ala	Ile	Cys	Gln	Gly	Cys	Leu	Thr
	290					295					300			
Leu	Gly	Ser	Tyr	Asn	Lys	Tyr	His	Asn	Asn	Cys	Tyr	Lys	Asp	Cys
	305				310					315				320
Ala	Leu	Cys	Phe	Leu	Asn	Ser	Ala	Thr	Ser	Phe	Val	Ala	Gly	Phe
			325						330				335	
Val	Phe	Ser	Ile	Leu	Gly	Phe	Met	Ser	Gln	Glu	Gln	Gly	Val	Pro
			340					345					350	
Ser	Glu	Val	Ala	Glu	Ser	Gly	Pro	Gly	Leu	Ala	Phe	Ile	Ala	Phe
	355					360					365			
Lys	Ala	Val	Thr	Met	Met	Pro	Leu	Ser	Gln	Leu	Trp	Ser	Cys	Leu
	370					375					380			
Phe	Ile	Met	Leu	Ile	Phe	Leu	Gly	Leu	Asp	Ser	Gln	Phe	Val	Cys
	385				390				395					400
Glu	Cys	Leu	Val	Thr	Ala	Ser	Ile	Asp	Met	Phe	Pro	Arg	Gln	Leu
			405					410					415	
Lys	Ser	Gly	Arg	Arg	Glu	Leu	Leu	Ile	Leu	Thr	Ile	Ala	Val	Met
			420					425					430	
Tyr	Leu	Ile	Gly	Leu	Phe	Leu	Val	Thr	Glu	Gly	Gly	Met	Tyr	Ile
	435					440						445		
Gln	Leu	Phe	Asp	Tyr	Tyr	Ala	Ser	Ser	Gly	Ile	Cys	Leu	Leu	Phe
	450					455					460			
Ser	Leu	Phe	Glu	Val	Val	Cys	Ile	Ser	Trp	Val	Tyr	Gly	Ala	Asp
	465				470				475					480
Phe	Tyr	Asp	Asn	Ile	Glu	Asp	Met	Ile	Gly	Tyr	Arg	Pro	Trp	Pro
			485						490					495
Val	Lys	Ile	Ser	Trp	Leu	Phe	Leu	Thr	Pro	Gly	Leu	Cys	Leu	Ala
			500					505					510	
Phe	Leu	Phe	Ser	Leu	Ser	Lys	Tyr	Thr	Pro	Leu	Lys	Tyr	Asn	Asn
	515						520					525		
Tyr	Val	Tyr	Pro	Pro	Trp	Gly	Tyr	Ser	Ile	Gly	Trp	Phe	Leu	Ala
	530					535				540				
Ser	Ser	Met	Val	Cys	Val	Pro	Leu	Phe	Val	Val	Ile	Thr	Leu	Leu
	545				550				555					560
Thr	Arg	Gly	Pro	Phe	Arg	Lys	Arg	Leu	Arg	Gln	Leu	Ile	Thr	Pro

				565					570					575			
Ser	Ser	Leu	Pro	Gln	Pro	Lys	Gln	His	Pro	Cys	Leu	Asp	Gly	Ser	Ala		
			580					585					590				
Gly	Arg	Asn	Phe	Gly	Pro	Ser	Pro	Thr	Arg	Glu	Gly	Leu	Ile	Ala	Gly		
		595					600					605					
Glu	Lys	Glu	Thr	His	Leu												
	610																

<210> 113

<211> 1097

<212> DNA

<213> Homo Sapiens

<220>

<221> CDS

<222> (11)...(898)

<400> 113

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	Met	Val	Asp	Ser	Val	Tyr	Arg	Thr	Arg	Ser	Leu	Gly	Val				
	1				5					10							
gcg	gcc	gaa	ggg	ctc	ccg	gac	cag	tac	gcg	gac	ggg	gag	gcg	gcg	cgc		97
Ala	Ala	Glu	Gly	Leu	Pro	Asp	Gln	Tyr	Ala	Asp	Gly	Glu	Ala	Ala	Arg		
	15					20					25						
gtg	tgg	cag	ctg	tat	atc	gga	gac	acc	cgc	agc	cgc	acc	gcc	gag	tac		145
Val	Trp	Gln	Leu	Tyr	Ile	Gly	Asp	Thr	Arg	Ser	Arg	Thr	Ala	Glu	Tyr		
	30				35					40					45		
aag	gca	tgg	ctg	ctt	ggg	ctg	ctg	cgc	cag	cac	ggc	tgc	cag	cgg	gtg		193
Lys	Ala	Trp	Leu	Leu	Gly	Leu	Leu	Arg	Gln	His	Gly	Cys	Gln	Arg	Val		
			50					55						60			
ctc	gac	gta	gcc	tgt	ggc	act	ggg	gtg	gac	tcc	att	atg	ctg	gtg	gaa		241
Leu	Asp	Val	Ala	Cys	Gly	Thr	Gly	Val	Asp	Ser	Ile	Met	Leu	Val	Glu		
			65					70					75				
gag	ggc	ttc	agt	gtg	acg	agt	gtg	gat	gcc	agt	gac	aag	atg	ctg	aag		289
Glu	Gly	Phe	Ser	Val	Thr	Ser	Val	Asp	Ala	Ser	Asp	Lys	Met	Leu	Lys		
		80					85					90					
tat	gca	ctt	aag	gag	cgc	tgg	aac	cgg	cgg	cac	gag	ccc	gcc	ttc	gac		337
Tyr	Ala	Leu	Lys	Glu	Arg	Trp	Asn	Arg	Arg	His	Glu	Pro	Ala	Phe	Asp		
	95					100					105						
aag	tgg	gtc	atc	gaa	gaa	gcc	aac	tgg	atg	act	ctg	gac	aaa	gat	gtg		385
Lys	Trp	Val	Ile	Glu	Glu	Ala	Asn	Trp	Met	Thr	Leu	Asp	Lys	Asp	Val		
	110				115					120					125		
ccc	cag	tca	gca	gag	ggg	ggc	ttt	gat	gct	gtc	atc	tgc	ctt	gga	aac		433
Pro	Gln	Ser	Ala	Glu	Gly	Gly	Phe	Asp	Ala	Val	Ile	Cys	Leu	Gly	Asn		
			130					135						140			
agt	ttc	gct	cac	ttg	cca	gac	tgc	aaa	ggg	gac	cag	agt	gag	cac	cgg		481
Ser	Phe	Ala	His	Leu	Pro	Asp	Cys	Lys	Gly	Asp	Gln	Ser	Glu	His	Arg		
			145					150					155				
ctg	gcg	ctg	aaa	aac	att	gcg	agc	atg	gtg	cgg	gca	ggg	ggc	cta	ctg		529
Leu	Ala	Leu	Lys	Asn	Ile	Ala	Ser	Met	Val	Arg	Ala	Gly	Gly	Leu	Leu		
		160					165					170					

gtc att gat cat cgc aac tac gac cac atc ctc agt aca ggc tgt gca 577  
 Val Ile Asp His Arg Asn Tyr Asp His Ile Leu Ser Thr Gly Cys Ala  
 175 180 185

ccc cca ggg aag aac atc tac tat aag agt gac ttg acc aag gac gtc 625  
 Pro Pro Gly Lys Asn Ile Tyr Tyr Lys Ser Asp Leu Thr Lys Asp Val  
 190 195 200 205

aca aca tca gtg ctg ata gtg aac aac aag gcc cac atg gtg acc ctg 673  
 Thr Thr Ser Val Leu Ile Val Asn Asn Lys Ala His Met Val Thr Leu  
 210 215 220

gac tat acg gtg cag gtg ccg ggg gct ggc cag gat ggc tct cct ggc 721  
 Asp Tyr Thr Val Gln Val Pro Gly Ala Gly Gln Asp Gly Ser Pro Gly  
 225 230 235

ttg agt aag ttc cgg ctc tcc tac tac cca cac tgt ctg gca tcc ttc 769  
 Leu Ser Lys Phe Arg Leu Ser Tyr Tyr Pro His Cys Leu Ala Ser Phe  
 240 245 250

acg gag ctg ctc caa gca gcc ttc gga ggt aag tgc cag cac agc gtc 817  
 Thr Glu Leu Leu Gln Ala Ala Phe Gly Gly Lys Cys Gln His Ser Val  
 255 260 265

ctg ggc gac ttc aag cct tac aag cca ggc caa acc tac att ccc tgc 865  
 Leu Gly Asp Phe Lys Pro Tyr Lys Pro Gly Gln Thr Tyr Ile Pro Cys  
 270 275 280 285

tac ttc atc cac gtg ctc aag agg aca gac tga gtgtggcctc agctcccaca 918  
 Tyr Phe Ile His Val Leu Lys Arg Thr Asp \*  
 290 295

agcctctgcc caggcactgc taggctctgt ctggaagatg gggaccagca gccccacacc 978  
 agggccagcc tctagagcag actacagctg ggggtgcaggg atgtgggttc cacagacgga 1038  
 agggtaaaca atatagtctt tttcagttcc tgcaaaaaaa aaaaaaaaaa aaaaaaaaaa 1097

<210> 114

<211> 295

<212> PRT

<213> Homo Sapiens

<400> 114

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 20 25 30  
 Leu Tyr Ile Gly Asp Thr Arg Ser Arg Thr Ala Glu Tyr Lys Ala Trp  
 35 40 45  
 Leu Leu Gly Leu Leu Arg Gln His Gly Cys Gln Arg Val Leu Asp Val  
 50 55 60  
 Ala Cys Gly Thr Gly Val Asp Ser Ile Met Leu Val Glu Glu Gly Phe  
 65 70 75 80  
 Ser Val Thr Ser Val Asp Ala Ser Asp Lys Met Leu Lys Tyr Ala Leu  
 85 90 95  
 Lys Glu Arg Trp Asn Arg Arg His Glu Pro Ala Phe Asp Lys Trp Val  
 100 105 110  
 Ile Glu Glu Ala Asn Trp Met Thr Leu Asp Lys Asp Val Pro Gln Ser  
 115 120 125  
 Ala Glu Gly Gly Phe Asp Ala Val Ile Cys Leu Gly Asn Ser Phe Ala  
 130 135 140  
 His Leu Pro Asp Cys Lys Gly Asp Gln Ser Glu His Arg Leu Ala Leu

145		150		155		160
Lys Asn Ile Ala Ser Met Val Arg Ala Gly Gly Leu Leu Val Ile Asp						
	165		170		175	
His Arg Asn Tyr Asp His Ile Leu Ser Thr Gly Cys Ala Pro Pro Gly						
	180		185		190	
Lys Asn Ile Tyr Tyr Lys Ser Asp Leu Thr Lys Asp Val Thr Thr Ser						
	195		200		205	
Val Leu Ile Val Asn Asn Lys Ala His Met Val Thr Leu Asp Tyr Thr						
	210		215		220	
Val Gln Val Pro Gly Ala Gly Gln Asp Gly Ser Pro Gly Leu Ser Lys						
	225		230		235	240
Phe Arg Leu Ser Tyr Tyr Pro His Cys Leu Ala Ser Phe Thr Glu Leu						
	245		250		255	
Leu Gln Ala Ala Phe Gly Gly Lys Cys Gln His Ser Val Leu Gly Asp						
	260		265		270	
Phe Lys Pro Tyr Lys Pro Gly Gln Thr Tyr Ile Pro Cys Tyr Phe Ile						
	275		280		285	
His Val Leu Lys Arg Thr Asp						
	290		295			

<210> 115  
 <211> 3363  
 <212> DNA  
 <213> Homo Sapiens

<220>  
 <221> CDS  
 <222> (259)...(3015)

<400> 115  
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 gctcattcgt caccctgttg ggtgagcaca gccctagctc aggccactgg gcaagccaca 180  
 ccatccaaag aggaggtcct ctgccccagg acccccacac caccagct ccctgttttg 240  
 ctgaggcctg gagcccc atg gcc tca ctg agc cga gcc cta cgt gtg gct 291  
 Met Ala Ser Leu Ser Arg Ala Leu Arg Val Ala  
 1 5 10

gct gcc cac cct cgc cag agc cct acc cgg ggc atg ggg cca tgc aac 339  
 Ala Ala His Pro Arg Gln Ser Pro Thr Arg Gly Met Gly Pro Cys Asn  
 15 20 25

ctg tcc agc gca gct ggc ccc aca gcc gag aag agt gtg cca tat cag 387  
 Leu Ser Ser Ala Ala Gly Pro Thr Ala Glu Lys Ser Val Pro Tyr Gln  
 30 35 40

cgg acc ctg aag gag gga cag ggc acc tcg gtg gtg gcc caa ggc cca 435  
 Arg Thr Leu Lys Glu Gly Gln Gly Thr Ser Val Val Ala Gln Gly Pro  
 45 50 55

agc cgg ccc ctg ccc agc acg gcc aac gtg gtg gtc att ggt gga ggc 483  
 Ser Arg Pro Leu Pro Ser Thr Ala Asn Val Val Val Ile Gly Gly Gly  
 60 65 70 75

agc ttg ggc tgc cag acc ctg tac cac ctg gcc aag ctg ggc atg agt 531  
 Ser Leu Gly Cys Gln Thr Leu Tyr His Leu Ala Lys Leu Gly Met Ser  
 80 85 90

ggg gcg gtg ctg ctg gag cgg gag cgg ctg acc tcc ggg acc acc tgg 579  
 Gly Ala Val Leu Leu Glu Arg Glu Arg Leu Thr Ser Gly Thr Thr Trp  
 95 100 105



cac acg gca ggc ctg ctg tgg cag ctg cgg ccc agt gac gtg gag gtg	627
His Thr Ala Gly Leu Leu Trp Gln Leu Arg Pro Ser Asp Val Glu Val	
110 115 120	
 gag ctt ctg gcc cac act cgg cgg gtg gtg agc cgg gag ctg gag gag	675
Glu Leu Leu Ala His Thr Arg Arg Val Val Ser Arg Glu Leu Glu Glu	
125 130 135	
 gag acg gga cta cac acg ggc tgg atc cag aat ggg ggc ctc ttc atc	723
Glu Thr Gly Leu His Thr Gly Trp Ile Gln Asn Gly Gly Leu Phe Ile	
140 145 150 155	
 gcg tcc aac cgg cag cgc ctg gac gag tac aag agg ctc atg tcg ctg	771
Ala Ser Asn Arg Gln Arg Leu Asp Glu Tyr Lys Arg Leu Met Ser Leu	
160 165 170	
 ggc aag gcg tat ggt gtg gaa tcc cat gtg ctg agc ccg gca gag acc	819
Gly Lys Ala Tyr Gly Val Glu Ser His Val Leu Ser Pro Ala Glu Thr	
175 180 185	
 aag act ctg tac ccg ctg atg aat gtg gac gac ctc tac ggg acc ctg	867
Lys Thr Leu Tyr Pro Leu Met Asn Val Asp Asp Leu Tyr Gly Thr Leu	
190 195 200	
 tat gtg ccg cac gac ggt acc atg gac ccc gct ggc acc tgt acc acc	915
Tyr Val Pro His Asp Gly Thr Met Asp Pro Ala Gly Thr Cys Thr Thr	
205 210 215	
 ctc gcc agg gca gct tct gcc cga gga gca cag gtc att gag aac tgc	963
Leu Ala Arg Ala Ala Ser Ala Arg Gly Ala Gln Val Ile Glu Asn Cys	
220 225 230 235	
 cca gtg acc ggc att cgt gtg tgg acg gat gat ttt ggg gtg cgg cgg	1011
Pro Val Thr Gly Ile Arg Val Trp Thr Asp Asp Phe Gly Val Arg Arg	
240 245 250	
 gtc gcg ggt gtg gag act cag cat ggt tcc atc cag aca ccc tgc gtg	1059
Val Ala Gly Val Glu Thr Gln His Gly Ser Ile Gln Thr Pro Cys Val	
255 260 265	
 gtc aac tgt gca gga gtg tgg gca agt gct gtg ggc cgg atg gct gga	1107
Val Asn Cys Ala Gly Val Trp Ala Ser Ala Val Gly Arg Met Ala Gly	
270 275 280	
 gtc aag gtc ccg ctg gtg gcc atg cac cat gcc tat gtc gtc acc gag	1155
Val Lys Val Pro Leu Val Ala Met His His Ala Tyr Val Val Thr Glu	
285 290 295	
 cgc atc gag ggg att cag aac atg ccc aat gtc cgt gat cat gat gcc	1203
Arg Ile Glu Gly Ile Gln Asn Met Pro Asn Val Arg Asp His Asp Ala	
300 305 310 315	
 tct gtc tac ctc cgc ctc caa ggg gat gcc ttg tct gtg ggt ggc tat	1251
Ser Val Tyr Leu Arg Leu Gln Gly Asp Ala Leu Ser Val Gly Gly Tyr	
320 325 330	
 gag gcc aac ccc atc ttt tgg gag gag gtg tca gac aag ttt gcc ttc	1299
Glu Ala Asn Pro Ile Phe Trp Glu Glu Val Ser Asp Lys Phe Ala Phe	
335 340 345	
 ggc ctc ttt gac ctg gac tgg gag gtg ttc acc cag cac att gaa ggc	1347

Gly	Leu	Phe	Asp	Leu	Asp	Trp	Glu	Val	Phe	Thr	Gln	His	Ile	Glu	Gly	
		350					355					360				
gcc	atc	aac	agg	gtc	ccc	gtg	ctg	gag	aag	aca	gga	atc	aag	tcc	acg	1395
Ala	Ile	Asn	Arg	Val	Pro	Val	Leu	Glu	Lys	Thr	Gly	Ile	Lys	Ser	Thr	
	365					370					375					
gtc	tgc	ggc	cct	gaa	tcc	ttc	acg	ccc	gac	cac	aag	ccc	ctg	atg	ggg	1443
Val	Cys	Gly	Pro	Glu	Ser	Phe	Thr	Pro	Asp	His	Lys	Pro	Leu	Met	Gly	
380					385					390					395	
gag	gca	cct	gag	ctc	cga	ggg	ttc	ttc	ctg	ggc	tgt	ggc	ttc	aac	agc	1491
Glu	Ala	Pro	Glu	Leu	Arg	Gly	Phe	Phe	Leu	Gly	Cys	Gly	Phe	Asn	Ser	
				400					405					410		
gca	gga	atg	atg	ctg	ggg	ggg	ggc	tgt	ggg	cag	gag	ctg	gcc	cac	tgg	1539
Ala	Gly	Met	Met	Leu	Gly	Gly	Gly	Cys	Gly	Gln	Glu	Leu	Ala	His	Trp	
			415					420					425			
atc	atc	cat	ggg	cgc	ccg	gag	aag	gac	atg	cat	ggc	tat	gac	atc	agg	1587
Ile	Ile	His	Gly	Arg	Pro	Glu	Lys	Asp	Met	His	Gly	Tyr	Asp	Ile	Arg	
		430					435					440				
cgc	ttc	cat	cac	tcg	ctc	acg	gac	cac	ccc	cgc	tgg	atc	cga	gag	cga	1635
Arg	Phe	His	His	Ser	Leu	Thr	Asp	His	Pro	Arg	Trp	Ile	Arg	Glu	Arg	
	445					450					455					
agc	cat	gag	tcc	tac	gcc	aag	aac	tac	tcc	gtc	gtc	ttc	ccc	cac	gat	1683
Ser	His	Glu	Ser	Tyr	Ala	Lys	Asn	Tyr	Ser	Val	Val	Phe	Pro	His	Asp	
460					465					470					475	
gag	ccg	ctg	gcc	ggg	cgc	aac	atg	agg	aga	gac	ccg	ctg	cat	gag	gaa	1731
Glu	Pro	Leu	Ala	Gly	Arg	Asn	Met	Arg	Arg	Asp	Pro	Leu	His	Glu	Glu	
				480					485					490		
ctc	ctt	gga	caa	ggc	tgc	gtg	ttc	cag	gag	cgg	cat	ggc	tgg	gag	cga	1779
Leu	Leu	Gly	Gln	Gly	Cys	Val	Phe	Gln	Glu	Arg	His	Gly	Trp	Glu	Arg	
			495					500					505			
ccg	gga	tgg	ttt	cat	ccc	cga	ggc	cca	gct	ccg	gtc	ctc	gag	tac	gac	1827
Pro	Gly	Trp	Phe	His	Pro	Arg	Gly	Pro	Ala	Pro	Val	Leu	Glu	Tyr	Asp	
		510					515					520				
tac	tac	ggg	gct	tac	ggg	agc	cgc	gcg	cac	gag	gac	tac	gcc	tac	cgc	1875
Tyr	Tyr	Gly	Ala	Tyr	Gly	Ser	Arg	Ala	His	Glu	Asp	Tyr	Ala	Tyr	Arg	
	525					530					535					
agg	ctg	ctg	gca	gac	gag	tac	acc	ttc	gcc	ttc	ccg	ccc	cac	cac	gac	1923
Arg	Leu	Leu	Ala	Asp	Glu	Tyr	Thr	Phe	Ala	Phe	Pro	Pro	His	His	Asp	
540					545					550					555	
acg	atc	aag	aag	gag	tgc	ctg	gcc	tgc	aga	ggg	gcc	gcc	gct	gtg	ttt	1971
Thr	Ile	Lys	Lys	Glu	Cys	Leu	Ala	Cys	Arg	Gly	Ala	Ala	Ala	Val	Phe	
				560					565					570		
gac	atg	tcc	tac	ttc	ggg	aag	ttc	tac	ctg	gtg	ggg	ctg	gat	gca	agg	2019
Asp	Met	Ser	Tyr	Phe	Gly	Lys	Phe	Tyr	Leu	Val	Gly	Leu	Asp	Ala	Arg	
			575					580					585			
aag	gct	gcc	gac	tgg	ctc	ttc	tcc	gca	gat	gtc	agc	cga	ccc	cca	ggc	2067
Lys	Ala	Ala	Asp	Trp	Leu	Phe	Ser	Ala	Asp	Val	Ser	Arg	Pro	Pro	Gly	
		590					595					600				

tcc acc gtg tac acg tgc atg ctc aac cac cgt ggg ggc acc gag agt	2115
Ser Thr Val Tyr Thr Cys Met Leu Asn His Arg Gly Gly Thr Glu Ser	
605 610 615	
gac ctg act gtc agc cgc ctg gca ccc agc cac cag gcc tcc ccg ctg	2163
Asp Leu Thr Val Ser Arg Leu Ala Pro Ser His Gln Ala Ser Pro Leu	
620 625 630 635	
gcc ccc gcc ttt gaa ggg gac ggt tac tac ctg gcc atg ggc ggg gcc	2211
Ala Pro Ala Phe Glu Gly Asp Gly Tyr Tyr Leu Ala Met Gly Gly Ala	
640 645 650	
gtg gcc cag cac aac tgg tcc cac atc acc acc gtg ctg cag gac cag	2259
Val Ala Gln His Asn Trp Ser His Ile Thr Thr Val Leu Gln Asp Gln	
655 660 665	
aag tcc cag tgc cag ctc atc gac agc tcc gag gac ctg ggt atg atc	2307
Lys Ser Gln Cys Gln Leu Ile Asp Ser Ser Glu Asp Leu Gly Met Ile	
670 675 680	
agt atc cag ggc cca gcc agc cga gcc att ttg cag gag gtg ctg gac	2355
Ser Ile Gln Gly Pro Ala Ser Arg Ala Ile Leu Gln Glu Val Leu Asp	
685 690 695	
gca gac ctg agc aac gag gcc ttc ccg ttc tcc acc cac aag cta ctg	2403
Ala Asp Leu Ser Asn Glu Ala Phe Pro Phe Ser Thr His Lys Leu Leu	
700 705 710 715	
aga gcc gca ggg cac ctg gtc cga gcc atg cgg ctg tcc ttt gtg ggg	2451
Arg Ala Ala Gly His Leu Val Arg Ala Met Arg Leu Ser Phe Val Gly	
720 725 730	
gag ctg ggc tgg gag ctg cac att cca aag gcg tcc tgc gtg cct gtg	2499
Glu Leu Gly Trp Glu Leu His Ile Pro Lys Ala Ser Cys Val Pro Val	
735 740 745	
tac cgg gct gtg atg gcc gcg ggt gcc aag cac ggc ctc atc aac gca	2547
Tyr Arg Ala Val Met Ala Ala Gly Ala Lys His Gly Leu Ile Asn Ala	
750 755 760	
ggg tac cgc gcc atc gac tcc ctg agc att gag aaa ggc tac cgg cac	2595
Gly Tyr Arg Ala Ile Asp Ser Leu Ser Ile Glu Lys Gly Tyr Arg His	
765 770 775	
tgg cac gcg gac ctg cgg cca gac gac agc ccc ctg gag gca ggc ctg	2643
Trp His Ala Asp Leu Arg Pro Asp Asp Ser Pro Leu Glu Ala Gly Leu	
780 785 790 795	
gcc ttc acc tgc aag ctc aag tcg ccg gtg ccc ttc ctg ggg agg gag	2691
Ala Phe Thr Cys Lys Leu Lys Ser Pro Val Pro Phe Leu Gly Arg Glu	
800 805 810	
gcc ctg gag cag cag cgg gcc gca ggc ctc cgc cgg cgc ctg gtg tgc	2739
Ala Leu Glu Gln Gln Arg Ala Ala Gly Leu Arg Arg Arg Leu Val Cys	
815 820 825	
ttc acc atg gag gac aaa gta ccc atg ttt ggc ctg gag gcc atc tgg	2787
Phe Thr Met Glu Asp Lys Val Pro Met Phe Gly Leu Glu Ala Ile Trp	
830 835 840	
agg aac ggc caa gtg gtg ggc cat gtc cgg agg gct gac ttt ggg ttc	2835

Arg	Asn	Gly	Gln	Val	Val	Gly	His	Val	Arg	Arg	Ala	Asp	Phe	Gly	Phe		
845						850					855						

  

gcc	atc	gac	aag	acc	atc	gcc	tac	ggg	tac	atc	cat	gac	ccc	agc	ggg	2883	
Ala	Ile	Asp	Lys	Thr	Ile	Ala	Tyr	Gly	Tyr	Ile	His	Asp	Pro	Ser	Gly		
860					865				870						875		

  

ggg	ccg	gtc	tcg	ctg	gac	ttt	gtg	aag	agc	ggg	gac	tat	gcc	ctg	gag	2931	
Gly	Pro	Val	Ser	Leu	Asp	Phe	Val	Lys	Ser	Gly	Asp	Tyr	Ala	Leu	Glu		
				880				885						890			

  

aga	atg	ggg	gtg	acc	tat	ggg	gcc	cag	gct	cac	ctg	aag	tcg	ccc	ttc	2979	
Arg	Met	Gly	Val	Thr	Tyr	Gly	Ala	Gln	Ala	His	Leu	Lys	Ser	Pro	Phe		
			895					900					905				

  

gac	ccc	aac	aac	aag	agg	gtg	aag	gga	atc	tac	tga	gggctcagac				3025	
Asp	Pro	Asn	Asn	Lys	Arg	Val	Lys	Gly	Ile	Tyr	*						
		910					915										

  

cacatgcccc	atccccatgct	gtccatccat	tctcacaggt	cccaaattggc	cctgggtcccc	3085	
aggaccctgg	accagccag	aacttgtgcc	ctccctgtcc	ttagcctagg	cctagtccctg	3145	
cgaaaacccc	caaaccagat	acggacagag	accaagatgg	cccatcctgt	ggtcactgac	3205	
tggaaggcag	tctctaatacc	accccaatcc	tcccagaaag	caaacctgta	agtgtcttgg	3265	
gctcagggac	catggcttgt	agccctttcc	aagcttctaa	aagggtgctta	gtaaataactt	3325	
gataagcccc	acgtgaaaaa	aaaaaaaaaa	aaaaaaaaa			3363	

  

<210> 116  
 <211> 918  
 <212> PRT  
 <213> Homo Sapiens

  

<400> 116

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Gln	Ser	Pro	Thr	Arg	Gly	Met	Gly	Pro	Cys	Asn	Leu	Ser	Ser	Ala	Ala		
			20					25					30				
Gly	Pro	Thr	Ala	Glu	Lys	Ser	Val	Pro	Tyr	Gln	Arg	Thr	Leu	Lys	Glu		
		35					40					45					
Gly	Gln	Gly	Thr	Ser	Val	Val	Ala	Gln	Gly	Pro	Ser	Arg	Pro	Leu	Pro		
	50					55					60						
Ser	Thr	Ala	Asn	Val	Val	Val	Ile	Gly	Gly	Gly	Ser	Leu	Gly	Cys	Gln		
65				70					75						80		
Thr	Leu	Tyr	His	Leu	Ala	Lys	Leu	Gly	Met	Ser	Gly	Ala	Val	Leu	Leu		
			85					90						95			
Glu	Arg	Glu	Arg	Leu	Thr	Ser	Gly	Thr	Thr	Trp	His	Thr	Ala	Gly	Leu		
		100					105						110				
Leu	Trp	Gln	Leu	Arg	Pro	Ser	Asp	Val	Glu	Val	Glu	Leu	Leu	Ala	His		
		115					120					125					
Thr	Arg	Arg	Val	Val	Ser	Arg	Glu	Leu	Glu	Glu	Glu	Thr	Gly	Leu	His		
	130					135					140						
Thr	Gly	Trp	Ile	Gln	Asn	Gly	Gly	Leu	Phe	Ile	Ala	Ser	Asn	Arg	Gln		
145					150				155						160		
Arg	Leu	Asp	Glu	Tyr	Lys	Arg	Leu	Met	Ser	Leu	Gly	Lys	Ala	Tyr	Gly		
			165					170						175			
Val	Glu	Ser	His	Val	Leu	Ser	Pro	Ala	Glu	Thr	Lys	Thr	Leu	Tyr	Pro		
		180						185					190				
Leu	Met	Asn	Val	Asp	Asp	Leu	Tyr	Gly	Thr	Leu	Tyr	Val	Pro	His	Asp		
	195						200					205					
Gly	Thr	Met	Asp	Pro	Ala	Gly	Thr	Cys	Thr	Thr	Leu	Ala	Arg	Ala	Ala		
	210					215					220						
Ser	Ala	Arg	Gly	Ala	Gln	Val	Ile	Glu	Asn	Cys	Pro	Val	Thr	Gly	Ile		
225					230				235						240		



Leu His Ile Pro Lys Ala Ser Cys Val Pro Val Tyr Arg Ala Val Met  
 740 745 750  
 Ala Ala Gly Ala Lys His Gly Leu Ile Asn Ala Gly Tyr Arg Ala Ile  
 755 760 765  
 Asp Ser Leu Ser Ile Glu Lys Gly Tyr Arg His Trp His Ala Asp Leu  
 770 775 780  
 Arg Pro Asp Asp Ser Pro Leu Glu Ala Gly Leu Ala Phe Thr Cys Lys  
 785 790 795 800  
 Leu Lys Ser Pro Val Pro Phe Leu Gly Arg Glu Ala Leu Glu Gln Gln  
 805 810 815  
 Arg Ala Ala Gly Leu Arg Arg Arg Leu Val Cys Phe Thr Met Glu Asp  
 820 825 830  
 Lys Val Pro Met Phe Gly Leu Glu Ala Ile Trp Arg Asn Gly Gln Val  
 835 840 845  
 Val Gly His Val Arg Arg Ala Asp Phe Gly Phe Ala Ile Asp Lys Thr  
 850 855 860  
 Ile Ala Tyr Gly Tyr Ile His Asp Pro Ser Gly Gly Pro Val Ser Leu  
 865 870 875 880  
 Asp Phe Val Lys Ser Gly Asp Tyr Ala Leu Glu Arg Met Gly Val Thr  
 885 890 895  
 Tyr Gly Ala Gln Ala His Leu Lys Ser Pro Phe Asp Pro Asn Asn Lys  
 900 905 910  
 Arg Val Lys Gly Ile Tyr  
 915

<210> 117

<211> 2431

<212> DNA

<213> Homo Sapiens

<220>

<221> CDS

<222> (125)...(1639)

<400> 117

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 accgcgaggc cagacatctg actgttggtg tgagaccagt gtccttggtg gtgtgccctg 120  
 agcc atg gag gcg cct ttg cag aca gag atg gtg gag ctg gtg ccc aat 169

Met Glu Ala Pro Leu Gln Thr Glu Met Val Glu Leu Val Pro Asn  
 1 5 10 15

ggc aaa cac tca gag ggg ctg ctc ccg gtc atc acc ccc atg gca ggc 217  
 Gly Lys His Ser Glu Gly Leu Leu Pro Val Ile Thr Pro Met Ala Gly  
 20 25 30

aac cag agg gtc gag gac cct gca cgg agc tgt atg gag ggc aag agc 265  
 Asn Gln Arg Val Glu Asp Pro Ala Arg Ser Cys Met Glu Gly Lys Ser  
 35 40 45

ttc cta cag aaa agt ccc agc aag gag cca cac ttc act gac ttc gag 313  
 Phe Leu Gln Lys Ser Pro Ser Lys Glu Pro His Phe Thr Asp Phe Glu  
 50 55 60

ggg aag aca tca ttc ggg atg tca gtg ttc aac ctc agc aat gcc atc 361  
 Gly Lys Thr Ser Phe Gly Met Ser Val Phe Asn Leu Ser Asn Ala Ile  
 65 70 75

atg ggc agc ggc atc ctg gga ctc gcc tat gcc atg gcc aat acg ggc 409  
 Met Gly Ser Gly Ile Leu Gly Leu Ala Tyr Ala Met Ala Asn Thr Gly  
 80 85 90 95

att atc ctt ttc ctg ttc ctg ttg aca gct gtc gcc ttg ctc tcc agc	457
Ile Ile Leu Phe Leu Phe Leu Leu Thr Ala Val Ala Leu Leu Ser Ser	
100 105 110	
tac tcc atc cac ctg cta ctc aag tcc tca ggg gtc gtg ggc atc cgt	505
Tyr Ser Ile His Leu Leu Leu Lys Ser Ser Gly Val Val Gly Ile Arg	
115 120 125	
gcc tat gag cag ctg ggc tac cgt gcc ttt ggg acc cca gga aag ctg	553
Ala Tyr Glu Gln Leu Gly Tyr Arg Ala Phe Gly Thr Pro Gly Lys Leu	
130 135 140	
gca gca gcc ctg gcc atc acg ctc cag aac atc gga gcc atg tcc agc	601
Ala Ala Ala Leu Ala Ile Thr Leu Gln Asn Ile Gly Ala Met Ser Ser	
145 150 155	
tac ctg tac atc atc aag tct gag ctg cca ctt gtc ata cag acc ttc	649
Tyr Leu Tyr Ile Ile Lys Ser Glu Leu Pro Leu Val Ile Gln Thr Phe	
160 165 170 175	
ctg aac ctg gag gag aaa acc tcg gac tgg tac atg aac ggg aac tac	697
Leu Asn Leu Glu Glu Lys Thr Ser Asp Trp Tyr Met Asn Gly Asn Tyr	
180 185 190	
ctg gta atc ctt gtc tct gtc acc atc att ctg ccc ctg gca ctg atg	745
Leu Val Ile Leu Val Ser Val Thr Ile Ile Leu Pro Leu Ala Leu Met	
195 200 205	
cgg cag ctt ggc tac ctg ggc tac tcc agc ggc ttc tct ctt agc tgc	793
Arg Gln Leu Gly Tyr Leu Gly Tyr Ser Ser Ser Gly Phe Ser Leu Ser Cys	
210 215 220	
atg gtg ttc ttc cta att gca gtc atc tac aaa aag ttc cac gtg ccc	841
Met Val Phe Phe Leu Ile Ala Val Ile Tyr Lys Lys Phe His Val Pro	
225 230 235	
tgc cca ctg ccc ccc aac ttc aac aac acc aca ggc aac ttc agc cac	889
Cys Pro Leu Pro Pro Asn Phe Asn Asn Thr Thr Gly Asn Phe Ser His	
240 245 250 255	
gtg gag atc gtg aag gag aag gtg cag ctg cag gtc gag cct gag gct	937
Val Glu Ile Val Lys Glu Lys Val Gln Leu Gln Val Glu Pro Glu Ala	
260 265 270	
tca gcc ttc tgc act ccc agc tac ttc acg ctc aac tca cag aca gca	985
Ser Ala Phe Cys Thr Pro Ser Tyr Phe Thr Leu Asn Ser Gln Thr Ala	
275 280 285	
tac acc atc ccc atc atg gcc ttc gcc ttc gtc tgc cac ccc gag gtg	1033
Tyr Thr Ile Pro Ile Met Ala Phe Ala Phe Val Cys His Pro Glu Val	
290 295 300	
ctg ccc atc tat act gag ctc aag gac ccc tcc aag aag aag atg cag	1081
Leu Pro Ile Tyr Thr Glu Leu Lys Asp Pro Ser Lys Lys Lys Met Gln	
305 310 315	
cac atc tcc aac ctg tcc atc gct gtc atg tac atc atg tac ttc ctg	1129
His Ile Ser Asn Leu Ser Ile Ala Val Met Tyr Ile Met Tyr Phe Leu	
320 325 330 335	
gct gcc ctc ttc ggc tac ctc acc ttc tac aac ggg gtg gag tcg gag	1177
Ala Ala Leu Phe Gly Tyr Leu Thr Phe Tyr Asn Gly Val Glu Ser Glu	

340										345					350					
ctg	ctg	cac	acc	tac	agc	aag	gtg	gac	ccg	ttt	gac	gtc	ctg	atc	ctg	1225				
Leu	Leu	His	Thr	Tyr	Ser	Lys	Val	Asp	Pro	Phe	Asp	Val	Leu	Ile	Leu					
			355					360					365							
tgt	gtg	cgc	gtg	gcc	gtg	ctg	aca	gca	gtc	acg	ctc	aca	gtg	ccc	atc	1273				
Cys	Val	Arg	Val	Ala	Val	Leu	Thr	Ala	Val	Thr	Leu	Thr	Val	Pro	Ile					
		370				375						380								
gtt	ctg	ttc	ccg	gtg	cgc	cgc	gcc	atc	cag	cag	atg	ctg	ttt	cca	aac	1321				
Val	Leu	Phe	Pro	Val	Arg	Arg	Ala	Ile	Gln	Gln	Met	Leu	Phe	Pro	Asn					
	385					390					395									
cag	gag	ttc	agc	tgg	ctg	cgg	cat	gtg	ctt	att	gcc	gtt	ggc	ctg	ctc	1369				
Gln	Glu	Phe	Ser	Trp	Leu	Arg	His	Val	Leu	Ile	Ala	Val	Gly	Leu	Leu					
400					405					410					415					
act	tgt	atc	aac	ctg	ctg	gtc	atc	ttt	gcc	ccc	aac	atc	ctg	ggc	atc	1417				
Thr	Cys	Ile	Asn	Leu	Leu	Val	Ile	Phe	Ala	Pro	Asn	Ile	Leu	Gly	Ile					
			420					425						430						
ttt	ggg	gtc	atc	ggt	gcc	aca	tct	gcc	cca	ttc	ctc	atc	ttc	atc	ttc	1465				
Phe	Gly	Val	Ile	Gly	Ala	Thr	Ser	Ala	Pro	Phe	Leu	Ile	Phe	Ile	Phe					
			435					440					445							
cct	gcc	atc	ttc	tac	ttc	cga	atc	atg	ccc	acg	gag	aag	gag	cct	gca	1513				
Pro	Ala	Ile	Phe	Tyr	Phe	Arg	Ile	Met	Pro	Thr	Glu	Lys	Glu	Pro	Ala					
		450					455					460								
aga	tcc	acc	ccc	aaa	atc	ctg	gcc	ctg	tgt	ttt	gct	atg	ctt	ggc	ttc	1561				
Arg	Ser	Thr	Pro	Lys	Ile	Leu	Ala	Leu	Cys	Phe	Ala	Met	Leu	Gly	Phe					
	465					470				475										
ttg	ctg	atg	acc	atg	agc	ttg	agc	ttc	atc	atc	att	gac	tgg	gcc	tca	1609				
Leu	Leu	Met	Thr	Met	Ser	Leu	Ser	Phe	Ile	Ile	Ile	Asp	Trp	Ala	Ser					
480					485				490						495					
ggg	acc	agc	cgg	cat	gga	gga	aac	cac	tag	ggtgaccctc	atcctgtttct					1659				
Gly	Thr	Ser	Arg	His	Gly	Gly	Asn	His	*											
				500																

gtctactcac	cctagcagcc	ctgcccagac	tcttcagccc	ctgctcccat	ccagtggcca	1719
gtcgggggag	gagaaagacg	cgattaacac	tgtggcattc	agccaggccc	catgtcctct	1779
ctgtggaagg	tttttgttca	agagccagga	ccaaggccct	tggggccacta	ccctgctagg	1839
ctctggagct	gtagaggctt	cctgaactgg	gagcagggta	gggctgtcgc	cttagatccc	1899
gcccagccc	ctcattccct	ccttgcacag	atgcatacac	tggggcccag	cagctgcctc	1959
ctgaggtgac	acagcctgta	ggaacataca	cagctgggat	cagcctgcag	ccatcccccg	2019
accctgctgc	taggccacgg	tctgcgccct	ggggccctcat	ctcccccagc	ccacttgttt	2079
tcccccttt	tattccctag	gcccttttca	gactcctggg	cccttggata	ctcttctccc	2139
atctcccttc	acaggatgac	accctcccat	accccatagc	tggggccagc	aggttctgct	2199
gaggggtggg	ctgggtgtagg	gacccccaag	agacccctgt	cctgtccctt	caccagtccct	2259
ggggaggctg	ggactcccc	tgccacaagc	ctggggccaca	gctcacattc	cactgctggg	2319
agaagaaaca	ggccgaggcc	cagagtggcc	tgcccccg	agccaaagac	cccagtggcc	2379
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<210> 118  
 <211> 504  
 <212> PRT  
 <213> Homo Sapiens

<400> 118



Met	Glu	Ala	Pro	Leu	Gln	Thr	Glu	Met	Val	Glu	Leu	Val	Pro	Asn	Gly	
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Lys	His	Ser	Glu	Gly	Leu	Leu	Pro	Val	Ile	Thr	Pro	Met	Ala	Gly	Asn	
			20					25					30			
Gln	Arg	Val	Glu	Asp	Pro	Ala	Arg	Ser	Cys	Met	Glu	Gly	Lys	Ser	Phe	
		35					40					45				
Leu	Gln	Lys	Ser	Pro	Ser	Lys	Glu	Pro	His	Phe	Thr	Asp	Phe	Glu	Gly	
	50					55					60					
Lys	Thr	Ser	Phe	Gly	Met	Ser	Val	Phe	Asn	Leu	Ser	Asn	Ala	Ile	Met	
65					70				75						80	
Gly	Ser	Gly	Ile	Leu	Gly	Leu	Ala	Tyr	Ala	Met	Ala	Asn	Thr	Gly	Ile	
				85					90					95		
Ile	Leu	Phe	Leu	Phe	Leu	Leu	Thr	Ala	Val	Ala	Leu	Leu	Ser	Ser	Tyr	
			100					105					110			
Ser	Ile	His	Leu	Leu	Leu	Lys	Ser	Ser	Gly	Val	Val	Gly	Ile	Arg	Ala	
		115					120					125				
Tyr	Glu	Gln	Leu	Gly	Tyr	Arg	Ala	Phe	Gly	Thr	Pro	Gly	Lys	Leu	Ala	
	130					135					140					
Ala	Ala	Leu	Ala	Ile	Thr	Leu	Gln	Asn	Ile	Gly	Ala	Met	Ser	Ser	Tyr	
145					150					155					160	
Leu	Tyr	Ile	Ile	Lys	Ser	Glu	Leu	Pro	Leu	Val	Ile	Gln	Thr	Phe	Leu	
				165					170					175		
Asn	Leu	Glu	Glu	Lys	Thr	Ser	Asp	Trp	Tyr	Met	Asn	Gly	Asn	Tyr	Leu	
			180					185				190				
Val	Ile	Leu	Val	Ser	Val	Thr	Ile	Ile	Leu	Pro	Leu	Ala	Leu	Met	Arg	
		195					200					205				
Gln	Leu	Gly	Tyr	Leu	Gly	Tyr	Ser	Ser	Gly	Phe	Ser	Leu	Ser	Cys	Met	
	210					215					220					
Val	Phe	Phe	Leu	Ile	Ala	Val	Ile	Tyr	Lys	Lys	Phe	His	Val	Pro	Cys	
225					230					235					240	
Pro	Leu	Pro	Pro	Asn	Phe	Asn	Asn	Thr	Thr	Gly	Asn	Phe	Ser	His	Val	
				245					250					255		
Glu	Ile	Val	Lys	Glu	Lys	Val	Gln	Leu	Gln	Val	Glu	Pro	Glu	Ala	Ser	
			260					265					270			
Ala	Phe	Cys	Thr	Pro	Ser	Tyr	Phe	Thr	Leu	Asn	Ser	Gln	Thr	Ala	Tyr	
		275					280					285				
Thr	Ile	Pro	Ile	Met	Ala	Phe	Ala	Phe	Val	Cys	His	Pro	Glu	Val	Leu	
	290					295					300					
Pro	Ile	Tyr	Thr	Glu	Leu	Lys	Asp	Pro	Ser	Lys	Lys	Lys	Met	Gln	His	
305					310					315					320	
Ile	Ser	Asn	Leu	Ser	Ile	Ala	Val	Met	Tyr	Ile	Met	Tyr	Phe	Leu	Ala	
				325					330					335		
Ala	Leu	Phe	Gly	Tyr	Leu	Thr	Phe	Tyr	Asn	Gly	Val	Glu	Ser	Glu	Leu	
			340					345					350			
Leu	His	Thr	Tyr	Ser	Lys	Val	Asp	Pro	Phe	Asp	Val	Leu	Ile	Leu	Cys	
		355					360					365				
Val	Arg	Val	Ala	Val	Leu	Thr	Ala	Val	Thr	Leu	Thr	Val	Pro	Ile	Val	
	370					375					380					
Leu	Phe	Pro	Val	Arg	Arg	Ala	Ile	Gln	Gln	Met	Leu	Phe	Pro	Asn	Gln	
385					390					395					400	
Glu	Phe	Ser	Trp	Leu	Arg	His	Val	Leu	Ile	Ala	Val	Gly	Leu	Leu	Thr	
				405					410					415		
Cys	Ile	Asn	Leu	Leu	Val	Ile	Phe	Ala	Pro	Asn	Ile	Leu	Gly	Ile	Phe	
			420					425					430			
Gly	Val	Ile	Gly	Ala	Thr	Ser	Ala	Pro	Phe	Leu	Ile	Phe	Ile	Phe	Pro	
		435					440					445				
Ala	Ile	Phe	Tyr	Phe	Arg	Ile	Met	Pro	Thr	Glu	Lys	Glu	Pro	Ala	Arg	
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Ser	Thr	Pro	Lys	Ile	Leu	Ala	Leu	Cys	Phe	Ala	Met	Leu	Gly	Phe	Leu	
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Leu	Met	Thr	Met	Ser	Leu	Ser	Phe	Ile	Ile	Ile	Asp	Trp	Ala	Ser	Gly	
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<212> DNA  
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gccggcgaga ccccggccag accccgctgc ccgcacaaa atg tcg gcc cgg acg 174  
Met Ser Ala Arg Thr  
1 5  
  
cca ttg ccg acg gtg aac gag cgg gac acg gaa aat cat aca tct gtg 222  
Pro Leu Pro Thr Val Asn Glu Arg Asp Thr Glu Asn His Thr Ser Val  
10 15 20  
  
gat gga tat act gaa cca cac atc cag cct acc aag tcg agt agc aga 270  
Asp Gly Tyr Thr Glu Pro His Ile Gln Pro Thr Lys Ser Ser Ser Arg  
25 30 35  
  
cag aac atc ccc cgg tgt aga aac tcc att acg tca gca aca gat gaa 318  
Gln Asn Ile Pro Arg Cys Arg Asn Ser Ile Thr Ser Ala Thr Asp Glu  
40 45 50  
  
cag cct cac att gga aat tac cgt tta caa aaa aca ata ggg aag gga 366  
Gln Pro His Ile Gly Asn Tyr Arg Leu Gln Lys Thr Ile Gly Lys Gly  
55 60 65  
  
aat ttt gcc aaa gtc aaa ttg gca aga cac gtt cta act ggt aga gag 414  
Asn Phe Ala Lys Val Lys Leu Ala Arg His Val Leu Thr Gly Arg Glu  
70 75 80 85  
  
gtt gct gtg aaa ata ata gac aaa act cag cta aat cct acc agt cta 462  
Val Ala Val Lys Ile Ile Asp Lys Thr Gln Leu Asn Pro Thr Ser Leu  
90 95 100  
  
caa aag tta ttt cga gaa gta cga ata atg aag ata ctg aat cat cct 510  
Gln Lys Leu Phe Arg Glu Val Arg Ile Met Lys Ile Leu Asn His Pro  
105 110 115  
  
aat ata gta aaa ttg ttt gaa gtt att gaa aca gag aag act ctc tat 558  
Asn Ile Val Lys Leu Phe Glu Val Ile Glu Thr Glu Lys Thr Leu Tyr  
120 125 130  
  
tta gtc atg gaa tac gcg agt ggg ggt gaa gta ttt gat tac tta gtt 606  
Leu Val Met Glu Tyr Ala Ser Gly Gly Glu Val Phe Asp Tyr Leu Val  
135 140 145  
  
gcc cat gga aga atg aaa gag aaa gag gcc cgt gca aaa ttt agg cag 654  
Ala His Gly Arg Met Lys Glu Lys Glu Ala Arg Ala Lys Phe Arg Gln  
150 155 160 165  
  
att gta tct gct gta cag tat tgt cat caa aag tac att gtt cac cgt 702  
Ile Val Ser Ala Val Gln Tyr Cys His Gln Lys Tyr Ile Val His Arg

170										175					180					
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att	gct	gac	ttt	ggg	ttt	agt	aat	gaa	ttt	aca	ggt	ggg	aac	aaa	ttg	798				
Ile	Ala	Asp	Phe	Gly	Phe	Ser	Asn	Glu	Phe	Thr	Val	Gly	Asn	Lys	Leu					
			200				205				210									
gac	aca	ttt	tgt	gga	agc	cca	ccc	tat	gct	gct	ccc	gag	ctt	ttc	caa	846				
Asp	Thr	Phe	Cys	Gly	Ser	Pro	Pro	Tyr	Ala	Ala	Pro	Glu	Leu	Phe	Gln					
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gga	aag	aag	tat	gat	ggg	cct	gaa	gtg	gat	gtg	tgg	agt	ctg	ggc	gtc	894				
Gly	Lys	Lys	Tyr	Asp	Gly	Pro	Glu	Val	Asp	Val	Trp	Ser	Leu	Gly	Val					
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att	ctc	tat	aca	tta	gtc	agt	ggc	tcc	ttg	cct	ttc	gat	ggc	cag	aat	942				
Ile	Leu	Tyr	Thr	Leu	Val	Ser	Gly	Ser	Leu	Pro	Phe	Asp	Gly	Gln	Asn					
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Leu	Lys	Glu	Leu	Arg	Glu	Arg	Val	Leu	Arg	Gly	Lys	Tyr	Arg	Ile	Pro					
			265				270				275									
ttc	tat	atg	tcc	aca	gac	tgt	gaa	aat	ctt	ctg	aag	aaa	tta	tta	gtc	1038				
Phe	Tyr	Met	Ser	Thr	Asp	Cys	Glu	Asn	Leu	Leu	Lys	Lys	Leu	Leu	Val					
			280				285				290									
ctg	aat	cca	ata	aag	aga	ggc	agc	ttg	gaa	caa	ata	atg	aaa	gat	cga	1086				
Leu	Asn	Pro	Ile	Lys	Arg	Gly	Ser	Leu	Glu	Gln	Ile	Met	Lys	Asp	Arg					
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tgg	atg	aat	gtt	ggg	cat	gaa	gag	gaa	gaa	cta	aag	cca	tat	act	gag	1134				
Trp	Met	Asn	Val	Gly	His	Glu	Glu	Glu	Glu	Leu	Lys	Pro	Tyr	Thr	Glu					
			310				315				320				325					
cct	gat	ccg	gat	ttc	aat	gac	aca	aaa	aga	ata	gac	att	atg	gtc	acc	1182				
Pro	Asp	Pro	Asp	Phe	Asn	Asp	Thr	Lys	Arg	Ile	Asp	Ile	Met	Val	Thr					
			330				335				340									
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Met	Gly	Phe	Ala	Arg	Asp	Glu	Ile	Asn	Asp	Ala	Leu	Ile	Asn	Gln	Lys					
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tat	gat	gaa	gtt	atg	gct	act	tat	att	ctt	cta	ggg	aga	aaa	cca	cct	1278				
Tyr	Asp	Glu	Val	Met	Ala	Thr	Tyr	Ile	Leu	Leu	Gly	Arg	Lys	Pro	Pro					
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gaa	ttt	gaa	ggg	ggg	gaa	tcg	tta	tcc	agt	gga	aac	ttg	tgt	cag	agg	1326				
Glu	Phe	Glu	Gly	Gly	Glu	Ser	Leu	Ser	Ser	Gly	Asn	Leu	Cys	Gln	Arg					
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tcc	cgg	ccc	agt	agt	gac	tta	aac	aac	agc	act	ctt	cag	tcc	cct	gct	1374				
Ser	Arg	Pro	Ser	Ser	Asp	Leu	Asn	Asn	Ser	Thr	Leu	Gln	Ser	Pro	Ala					
			390				395				400				405					
cac	ctg	aag	gtc	cag	aga	agt	atc	tca	gca	aat	cag	aag	cag	cgg	cgt	1422				
His	Leu	Lys	Val	Gln	Arg	Ser	Ile	Ser	Ala	Asn	Gln	Lys	Gln	Arg	Arg					
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ttc agt gat cat gct ggt cca tcc att cct cct gct gta tca tat acc	1470
Phe Ser Asp His Ala Gly Pro Ser Ile Pro Pro Ala Val Ser Tyr Thr	
425 430 435	
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Lys Arg Pro Gln Ala Asn Ser Val Glu Ser Glu Gln Lys Glu Glu Trp	
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Asp Lys Asp Val Ala Arg Lys Leu Gly Ser Thr Thr Val Gly Ser Lys	
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agc gag atg act gca agc cct ctt gta ggg cca gag agg aaa aaa tct	1614
Ser Glu Met Thr Ala Ser Pro Leu Val Gly Pro Glu Arg Lys Lys Ser	
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tca act att cca agt aac aat gtg tat tct gga ggt agc atg gca aga	1662
Ser Thr Ile Pro Ser Asn Asn Val Tyr Ser Gly Gly Ser Met Ala Arg	
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Arg Asn Thr Tyr Val Cys Glu Arg Thr Thr Asp Arg Tyr Val Ala Leu	
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cag aat gga aaa gac agc agc ctt acg gag atg tct gtg agt agc ata	1758
Gln Asn Gly Lys Asp Ser Ser Leu Thr Glu Met Ser Val Ser Ser Ile	
520 525 530	
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Ser Ser Ala Gly Ser Ser Val Ala Ser Ala Val Pro Ser Ala Arg Pro	
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Arg His Gln Lys Ser Met Ser Thr Ser Gly His Pro Ile Lys Val Thr	
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Leu Pro Thr Ile Lys Asp Gly Ser Glu Ala Tyr Arg Pro Gly Thr Thr	
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cag aga gtg cct gct gct tcc cca tct gct cac agt att agt act gcg	1950
Gln Arg Val Pro Ala Ala Ser Pro Ser Ala His Ser Ile Ser Thr Ala	
585 590 595	
act cca gac cgg acc cgt ttt ccc cga ggg agc tca agc cga agc act	1998
Thr Pro Asp Arg Thr Arg Phe Pro Arg Gly Ser Ser Ser Arg Ser Thr	
600 605 610	
ttc cat ggt gaa cag ctc cgg gag cga cgc agc gtt gct tat aat ggg	2046
Phe His Gly Glu Gln Leu Arg Glu Arg Arg Ser Val Ala Tyr Asn Gly	
615 620 625	
cca cct gct tca cca tcc cat gaa acg ggt gca ttt gca cat gcc aga	2094
Pro Pro Ala Ser Pro Ser His Glu Thr Gly Ala Phe Ala His Ala Arg	
630 635 640 645	
agg gga acg tca act ggt ata ata agc aaa atc aca tcc aaa ttt gtt	2142
Arg Gly Thr Ser Thr Gly Ile Ile Ser Lys Ile Thr Ser Lys Phe Val	
650 655 660	
cgc agg gat cca agt gaa ggc gaa gcc agt ggc aga acc gac acc tca	2190
Arg Arg Asp Pro Ser Glu Gly Glu Ala Ser Gly Arg Thr Asp Thr Ser	

665					670					675						
aga	agt	aca	tca	ggg	gaa	cca	aaa	gaa	aga	gac	aag	gaa	gag	ggg	aaa	2238
Arg	Ser	Thr	Ser	Gly	Glu	Pro	Lys	Glu	Arg	Asp	Lys	Glu	Glu	Gly	Lys	
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gat	tct	aag	ccg	cgt	tct	ttg	cgg	ttc	aca	tgg	agt	atg	aag	acc	act	2286
Asp	Ser	Lys	Pro	Arg	Ser	Leu	Arg	Phe	Thr	Trp	Ser	Met	Lys	Thr	Thr	
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Ser	Ser	Met	Asp	Pro	Asn	Asp	Met	Met	Arg	Glu	Ile	Arg	Lys	Val	Leu	
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gat	gca	aat	aac	tgt	gat	tat	gag	caa	aaa	gag	aga	ttt	ttg	ctt	ttc	2382
Asp	Ala	Asn	Asn	Cys	Asp	Tyr	Glu	Gln	Lys	Glu	Arg	Phe	Leu	Leu	Phe	
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tgt	gtc	cat	gga	gac	gct	aga	cag	gat	agc	ctc	gtg	cag	tgg	gag	atg	2430
Cys	Val	His	Gly	Asp	Ala	Arg	Gln	Asp	Ser	Leu	Val	Gln	Trp	Glu	Met	
			745					750					755			
gaa	gtc	tgc	aag	ttg	cca	cga	ctg	tca	ctt	aat	ggg	ggt	cgc	ttc	aag	2478
Glu	Val	Cys	Lys	Leu	Pro	Arg	Leu	Ser	Leu	Asn	Gly	Val	Arg	Phe	Lys	
		760					765					770				
cga	ata	tct	ggg	aca	tct	att	gcc	ttt	aag	aac	att	gca	tca	aaa	ata	2526
Arg	Ile	Ser	Gly	Thr	Ser	Ile	Ala	Phe	Lys	Asn	Ile	Ala	Ser	Lys	Ile	
		775				780					785					
gca	aat	gag	ctt	aag	ctg	taa	aga	agt	ccaa	atttacaggt	tcagggaaga					2577
Ala	Asn	Glu	Leu	Lys	Leu	*										
		790				795										
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<211> 795

<212> PRT

<213> Homo Sapiens

<400> 120

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Lys	Ser	Ser	Ser	Arg	Gln	Asn	Ile	Pro	Arg	Cys	Arg	Asn	Ser	Ile	Thr
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Ser	Ala	Thr	Asp	Glu	Gln	Pro	His	Ile	Gly	Asn	Tyr	Arg	Leu	Gln	Lys
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Thr	Ile	Gly	Lys	Gly	Asn	Phe	Ala	Lys	Val	Lys	Leu	Ala	Arg	His	Val
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Leu	Thr	Gly	Arg	Glu	Val	Ala	Val	Lys	Ile	Ile	Asp	Lys	Thr	Gln	Leu
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Asn	Pro	Thr	Ser	Leu	Gln	Lys	Leu	Phe	Arg	Glu	Val	Arg	Ile	Met	Lys
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Ile	Leu	Asn	His	Pro	Asn	Ile	Val	Lys	Leu	Phe	Glu	Val	Ile	Glu	Thr
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Glu	Lys	Thr	Leu	Tyr	Leu	Val	Met	Glu	Tyr	Ala	Ser	Gly	Gly	Glu	Val
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Phe	Asp	Tyr	Leu	Val	Ala	His	Gly	Arg	Met	Lys	Glu	Lys	Glu	Ala	Arg
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Ala	Lys	Phe	Arg	Gln	Ile	Val	Ser	Ala	Val	Gln	Tyr	Cys	His	Gln	Lys
				165					170					175	
Tyr	Ile	Val	His	Arg	Asp	Leu	Lys	Ala	Glu	Asn	Leu	Leu	Leu	Asp	Gly
			180					185					190		
Asp	Met	Asn	Ile	Lys	Ile	Ala	Asp	Phe	Gly	Phe	Ser	Asn	Glu	Phe	Thr
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Val	Gly	Asn	Lys	Leu	Asp	Thr	Phe	Cys	Gly	Ser	Pro	Pro	Tyr	Ala	Ala
210						215					220				
Pro	Glu	Leu	Phe	Gln	Gly	Lys	Lys	Tyr	Asp	Gly	Pro	Glu	Val	Asp	Val
225					230					235					240
Trp	Ser	Leu	Gly	Val	Ile	Leu	Tyr	Thr	Leu	Val	Ser	Gly	Ser	Leu	Pro
				245					250					255	
Phe	Asp	Gly	Gln	Asn	Leu	Lys	Glu	Leu	Arg	Glu	Arg	Val	Leu	Arg	Gly
			260					265					270		
Lys	Tyr	Arg	Ile	Pro	Phe	Tyr	Met	Ser	Thr	Asp	Cys	Glu	Asn	Leu	Leu
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Lys	Lys	Leu	Leu	Val	Leu	Asn	Pro	Ile	Lys	Arg	Gly	Ser	Leu	Glu	Gln
290						295					300				
Ile	Met	Lys	Asp	Arg	Trp	Met	Asn	Val	Gly	His	Glu	Glu	Glu	Glu	Leu
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Lys	Pro	Tyr	Thr	Glu	Pro	Asp	Pro	Asp	Phe	Asn	Asp	Thr	Lys	Arg	Ile
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Asp	Ile	Met	Val	Thr	Met	Gly	Phe	Ala	Arg	Asp	Glu	Ile	Asn	Asp	Ala
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Leu	Ile	Asn	Gln	Lys	Tyr	Asp	Glu	Val	Met	Ala	Thr	Tyr	Ile	Leu	Leu
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Gly	Arg	Lys	Pro	Pro	Glu	Phe	Glu	Gly	Gly	Glu	Ser	Leu	Ser	Ser	Gly
		370				375					380				
Asn	Leu	Cys	Gln	Arg	Ser	Arg	Pro	Ser	Ser	Asp	Leu	Asn	Asn	Ser	Thr
385					390					395					400
Leu	Gln	Ser	Pro	Ala	His	Leu	Lys	Val	Gln	Arg	Ser	Ile	Ser	Ala	Asn
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Gln	Lys	Gln	Arg	Arg	Phe	Ser	Asp	His	Ala	Gly	Pro	Ser	Ile	Pro	Pro
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Ala	Val	Ser	Tyr	Thr	Lys	Arg	Pro	Gln	Ala	Asn	Ser	Val	Glu	Ser	Glu
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Gln	Lys	Glu	Glu	Trp	Asp	Lys	Asp	Val	Ala	Arg	Lys	Leu	Gly	Ser	Thr
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Thr	Val	Gly	Ser	Lys	Ser	Glu	Met	Thr	Ala	Ser	Pro	Leu	Val	Gly	Pro
465					470					475					480
Glu	Arg	Lys	Lys	Ser	Ser	Thr	Ile	Pro	Ser	Asn	Asn	Val	Tyr	Ser	Gly
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Gly	Ser	Met	Ala	Arg	Arg	Asn	Thr	Tyr	Val	Cys	Glu	Arg	Thr	Thr	Asp
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Arg	Tyr	Val	Ala	Leu	Gln	Asn	Gly	Lys	Asp	Ser	Ser	Leu	Thr	Glu	Met
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Ser	Val	Ser	Ser	Ile	Ser	Ser	Ala	Gly	Ser	Ser	Val	Ala	Ser	Ala	Val
		530				535					540				
Pro	Ser	Ala	Arg	Pro	Arg	His	Gln	Lys	Ser	Met	Ser	Thr	Ser	Gly	His
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Pro	Ile	Lys	Val	Thr	Leu	Pro	Thr	Ile	Lys	Asp	Gly	Ser	Glu	Ala	Tyr
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Arg	Pro	Gly	Thr	Thr	Gln	Arg	Val	Pro	Ala	Ala	Ser	Pro	Ser	Ala	His
			580					585					590		
Ser	Ile	Ser	Thr	Ala	Thr	Pro	Asp	Arg	Thr	Arg	Phe	Pro	Arg	Gly	Ser
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Ser	Ser	Arg	Ser	Thr	Phe	His	Gly	Glu	Gln	Leu	Arg	Glu	Arg	Arg	Ser
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Val	Ala	Tyr	Asn	Gly	Pro	Pro	Ala	Ser	Pro	Ser	His	Glu	Thr	Gly	Ala
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Phe	Ala	His	Ala	Arg	Arg	Gly	Thr	Ser	Thr	Gly	Ile	Ile	Ser	Lys	Ile
				645					650						655
Thr	Ser	Lys	Phe	Val	Arg	Arg	Asp	Pro	Ser	Glu	Gly	Glu	Ala	Ser	Gly
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Arg	Thr	Asp	Thr	Ser	Arg	Ser	Thr	Ser	Gly	Glu	Pro	Lys	Glu	Arg	Asp
		675					680					685			
Lys	Glu	Glu	Gly	Lys	Asp	Ser	Lys	Pro	Arg	Ser	Leu	Arg	Phe	Thr	Trp
	690					695					700				
Ser	Met	Lys	Thr	Thr	Ser	Ser	Met	Asp	Pro	Asn	Asp	Met	Met	Arg	Glu
705					710					715					720
Ile	Arg	Lys	Val	Leu	Asp	Ala	Asn	Asn	Cys	Asp	Tyr	Glu	Gln	Lys	Glu
				725					730						735
Arg	Phe	Leu	Leu	Phe	Cys	Val	His	Gly	Asp	Ala	Arg	Gln	Asp	Ser	Leu
			740					745					750		
Val	Gln	Trp	Glu	Met	Glu	Val	Cys	Lys	Leu	Pro	Arg	Leu	Ser	Leu	Asn
	755						760					765			
Gly	Val	Arg	Phe	Lys	Arg	Ile	Ser	Gly	Thr	Ser	Ile	Ala	Phe	Lys	Asn
	770					775					780				
Ile	Ala	Ser	Lys	Ile	Ala	Asn	Glu	Leu	Lys	Leu					
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<211> 1811

<212> DNA

<213> Homo Sapiens

<220>

<221> CDS

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<400> 121

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Met Asn Cys Gln Gln

1

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ctg tgg ctg ggc ttc cta ctc ccc atg aca gtc tca ggc cgg gtc ctg 164  
Leu Trp Leu Gly Phe Leu Leu Pro Met Thr Val Ser Gly Arg Val Leu  
10 15 20

ggg ctt gca gag gtg gcg ccc gtg gac tac ctg tca caa tat ggg tac 212  
Gly Leu Ala Glu Val Ala Pro Val Asp Tyr Leu Ser Gln Tyr Gly Tyr  
25 30 35

cta cag aag cct cta gaa gga tct aat aac ttc aag cca gaa gat atc 260  
Leu Gln Lys Pro Leu Glu Gly Ser Asn Asn Phe Lys Pro Glu Asp Ile  
40 45 50

acc gag gct ctg aga gct ttt cag gaa gca tct gaa ctt cca gtc tca 308  
Thr Glu Ala Leu Arg Ala Phe Gln Glu Ala Ser Glu Leu Pro Val Ser  
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ggt cag ctg gat gat gcc aca agg gcc cgc atg agg cag cct cgt tgt 356  
Gly Gln Leu Asp Asp Ala Thr Arg Ala Arg Met Arg Gln Pro Arg Cys  
70 75 80 85

ggc cta gag gat ccc ttc aac cag aag acc ctt aaa tac ctg ttg ctg 404  
Gly Leu Glu Asp Pro Phe Asn Gln Lys Thr Leu Lys Tyr Leu Leu Leu  
90 95 100

ggc cgc tgg aga aag aag cac ctg act ttc cgc atc ttg aac ctg ccc	452
Gly Arg Trp Arg Lys Lys His Leu Thr Phe Arg Ile Leu Asn Leu Pro	
105 110 115	
tcc acc ctt cca ccc cac aca gcc cgg gca gcc ctg cgt caa gcc ttc	500
Ser Thr Leu Pro Pro His Thr Ala Arg Ala Ala Leu Arg Gln Ala Phe	
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cag gac tgg agc aat gtg gct ccc ttg acc ttc caa gag gtg cag gct	548
Gln Asp Trp Ser Asn Val Ala Pro Leu Thr Phe Gln Glu Val Gln Ala	
135 140 145	
ggg ggc gct gac atc cgc ctc tcc ttc cat ggc cgc caa agc tcg tac	596
Gly Ala Ala Asp Ile Arg Leu Ser Phe His Gly Arg Gln Ser Ser Tyr	
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Cys Ser Asn Thr Phe Asp Gly Pro Gly Arg Val Leu Ala His Ala Asp	
170 175 180	
atc cca gag ctg ggc agt gtg cac ttc gac gaa gac gag ttc tgg act	692
Ile Pro Glu Leu Gly Ser Val His Phe Asp Glu Asp Glu Phe Trp Thr	
185 190 195	
gag ggg acc tac cgt ggg gtg aac ctg cgc atc att gca gcc cat gaa	740
Glu Gly Thr Tyr Arg Gly Val Asn Leu Arg Ile Ile Ala Ala His Glu	
200 205 210	
gtg ggc cat gct ctg ggg ctt ggg cac tcc cga tat tcc cag gcc ctc	788
Val Gly His Ala Leu Gly Leu Gly His Ser Arg Tyr Ser Gln Ala Leu	
215 220 225	
atg gcc cca gtc tac gag ggc tac cgg ccc cac ttt aag ctg cac cca	836
Met Ala Pro Val Tyr Glu Gly Tyr Arg Pro His Phe Lys Leu His Pro	
230 235 240 245	
gat gat gtg gca ggg atc cag gct ctc tat ggc aag aag agt cca gtg	884
Asp Asp Val Ala Gly Ile Gln Ala Leu Tyr Gly Lys Lys Ser Pro Val	
250 255 260	
ata agg gat gag gaa gaa gaa gag aca gag ctg ccc act gtg ccc cca	932
Ile Arg Asp Glu Glu Glu Glu Glu Thr Glu Leu Pro Thr Val Pro Pro	
265 270 275	
gtg ccc aca gaa ccc agt ccc atg cca gac cct tgc agt agt gaa ctg	980
Val Pro Thr Glu Pro Ser Pro Met Pro Asp Pro Cys Ser Ser Glu Leu	
280 285 290	
gat gcc atg atg ctg ggg ccc cgt ggg aag acc tat gct ttc aag ggg	1028
Asp Ala Met Met Leu Gly Pro Arg Gly Lys Thr Tyr Ala Phe Lys Gly	
295 300 305	
gac tat gtg tgg act gta tca gat tca gga ccg ggc ccc ttg ttc cga	1076
Asp Tyr Val Trp Thr Val Ser Asp Ser Gly Pro Gly Pro Leu Phe Arg	
310 315 320 325	
gtg tct gcc ctt tgg gag ggg ctc ccc gga aac ctg gat gct gct gtc	1124
Val Ser Ala Leu Trp Glu Gly Leu Pro Gly Asn Leu Asp Ala Ala Val	
330 335 340	
tac tcg cct cga aca caa tgg att cac ttc ttt aag gga gac aag gtg	1172



Tyr	Ser	Pro	Arg	Thr	Gln	Trp	Ile	His	Phe	Phe	Lys	Gly	Asp	Lys	Val		
			345					350					355				
tgg	cgc	tac	att	aat	ttc	aag	atg	tct	cct	ggc	ttc	ccc	aag	aag	ctg	1220	
Trp	Arg	Tyr	Ile	Asn	Phe	Lys	Met	Ser	Pro	Gly	Phe	Pro	Lys	Lys	Leu		
		360					365					370					
aat	agg	gta	gaa	cct	aac	ctg	gat	gca	gct	ctc	tat	tgg	cct	ctc	aac	1268	
Asn	Arg	Val	Glu	Pro	Asn	Leu	Asp	Ala	Ala	Leu	Tyr	Trp	Pro	Leu	Asn		
	375					380					385						
caa	aag	gtg	ttc	ctc	ttt	aag	ggc	tcc	ggg	tac	tgg	cag	tgg	gac	gag	1316	
Gln	Lys	Val	Phe	Leu	Phe	Lys	Gly	Ser	Gly	Tyr	Trp	Gln	Trp	Asp	Glu		
390					395				400						405		
cta	gcc	cga	act	gac	ttc	agc	agc	tac	ccc	aaa	cca	atc	aag	ggg	ttg	1364	
Leu	Ala	Arg	Thr	Asp	Phe	Ser	Ser	Tyr	Pro	Lys	Pro	Ile	Lys	Gly	Leu		
			410					415					420				
ttt	acg	gga	gtg	cca	aac	cag	ccc	tcg	gct	gct	atg	agt	tgg	caa	gat	1412	
Phe	Thr	Gly	Val	Pro	Asn	Gln	Pro	Ser	Ala	Ala	Met	Ser	Trp	Gln	Asp		
		425					430					435					
ggc	cga	gtc	tac	ttc	ttc	aag	ggc	aaa	gtc	tac	tgg	cgc	ctc	aac	cag	1460	
Gly	Arg	Val	Tyr	Phe	Phe	Lys	Gly	Lys	Val	Tyr	Trp	Arg	Leu	Asn	Gln		
	440					445					450						
cag	ctt	cga	gta	gag	aaa	ggc	tat	ccc	aga	aat	att	tcc	cac	aac	tgg	1508	
Gln	Leu	Arg	Val	Glu	Lys	Gly	Tyr	Pro	Arg	Asn	Ile	Ser	His	Asn	Trp		
	455				460					465							
atg	cac	tgt	cgt	ccc	cgg	act	ata	gac	act	acc	cca	tca	ggg	ggg	aat	1556	
Met	His	Cys	Arg	Pro	Arg	Thr	Ile	Asp	Thr	Thr	Pro	Ser	Gly	Gly	Asn		
470				475				480					485				
acc	act	ccc	tca	ggg	acg	ggc	ata	acc	ttg	gat	acc	act	ctc	tca	gcc	1604	
Thr	Thr	Pro	Ser	Gly	Thr	Gly	Ile	Thr	Leu	Asp	Thr	Thr	Leu	Ser	Ala		
			490				495						500				
aca	gaa	acc	acg	ttt	gaa	tac	tga	ctgctc	acccc	acagacacaa	tcttggacat	1658					
Thr	Glu	Thr	Thr	Phe	Glu	Tyr	*										
			505														
taaccctga	ggctccacca	cccacccttt	catttcccc	ccagaagcct	aaggccta	1718											
agctgaatga	aatacctgtc	tgctcagtag	aaccttgcag	gtgctgtagc	aggcgcaaga	1778											
ccgtagatct	caggcctcta	acacttccaa	ctc			1811											

<210> 122

<211> 508

<212> PRT

<213> Homo Sapiens

<400> 122

Met	Asn	Cys	Gln	Gln	Leu	Trp	Leu	Gly	Phe	Leu	Leu	Pro	Met	Thr	Val		
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		20					25				30						
Ser	Gln	Tyr	Gly	Tyr	Leu	Gln	Lys	Pro	Leu	Glu	Gly	Ser	Asn	Asn	Phe		
	35					40					45						
Lys	Pro	Glu	Asp	Ile	Thr	Glu	Ala	Leu	Arg	Ala	Phe	Gln	Glu	Ala	Ser		
	50					55				60							
Glu	Leu	Pro	Val	Ser	Gly	Gln	Leu	Asp	Asp	Ala	Thr	Arg	Ala	Arg	Met		

65					70					75				80
Arg	Gln	Pro	Arg	Cys	Gly	Leu	Glu	Asp	Pro	Phe	Asn	Gln	Lys	Thr
				85					90					95
Lys	Tyr	Leu	Leu	Leu	Gly	Arg	Trp	Arg	Lys	Lys	His	Leu	Thr	Phe
			100					105					110	
Ile	Leu	Asn	Leu	Pro	Ser	Thr	Leu	Pro	Pro	His	Thr	Ala	Arg	Ala
		115					120					125		
Leu	Arg	Gln	Ala	Phe	Gln	Asp	Trp	Ser	Asn	Val	Ala	Pro	Leu	Thr
	130					135					140			Phe
Gln	Glu	Val	Gln	Ala	Gly	Ala	Ala	Asp	Ile	Arg	Leu	Ser	Phe	His
145					150					155				Gly
Arg	Gln	Ser	Ser	Tyr	Cys	Ser	Asn	Thr	Phe	Asp	Gly	Pro	Gly	Arg
				165					170					175
Leu	Ala	His	Ala	Asp	Ile	Pro	Glu	Leu	Gly	Ser	Val	His	Phe	Asp
			180					185					190	Glu
Asp	Glu	Phe	Trp	Thr	Glu	Gly	Thr	Tyr	Arg	Gly	Val	Asn	Leu	Arg
	195						200					205		Ile
Ile	Ala	Ala	His	Glu	Val	Gly	His	Ala	Leu	Gly	Leu	Gly	His	Ser
	210					215					220			Arg
Tyr	Ser	Gln	Ala	Leu	Met	Ala	Pro	Val	Tyr	Glu	Gly	Tyr	Arg	Pro
225					230					235				His
Phe	Lys	Leu	His	Pro	Asp	Asp	Val	Ala	Gly	Ile	Gln	Ala	Leu	Tyr
				245					250					Gly
Lys	Lys	Ser	Pro	Val	Ile	Arg	Asp	Glu	Glu	Glu	Glu	Glu	Thr	Glu
			260					265					270	Leu
Pro	Thr	Val	Pro	Pro	Val	Pro	Thr	Glu	Pro	Ser	Pro	Met	Pro	Asp
	275						280					285		Pro
Cys	Ser	Ser	Glu	Leu	Asp	Ala	Met	Met	Leu	Gly	Pro	Arg	Gly	Lys
	290					295					300			Thr
Tyr	Ala	Phe	Lys	Gly	Asp	Tyr	Val	Trp	Thr	Val	Ser	Asp	Ser	Gly
305					310					315				Pro
Gly	Pro	Leu	Phe	Arg	Val	Ser	Ala	Leu	Trp	Glu	Gly	Leu	Pro	Gly
				325					330					Asn
Leu	Asp	Ala	Ala	Val	Tyr	Ser	Pro	Arg	Thr	Gln	Trp	Ile	His	Phe
		340						345					350	Phe
Lys	Gly	Asp	Lys	Val	Trp	Arg	Tyr	Ile	Asn	Phe	Lys	Met	Ser	Pro
	355						360					365		Gly
Phe	Pro	Lys	Lys	Leu	Asn	Arg	Val	Glu	Pro	Asn	Leu	Asp	Ala	Ala
	370					375					380			Leu
Tyr	Trp	Pro	Leu	Asn	Gln	Lys	Val	Phe	Leu	Phe	Lys	Gly	Ser	Gly
385					390				395					Tyr
Trp	Gln	Trp	Asp	Glu	Leu	Ala	Arg	Thr	Asp	Phe	Ser	Ser	Tyr	Pro
			405						410					Lys
Pro	Ile	Lys	Gly	Leu	Phe	Thr	Gly	Val	Pro	Asn	Gln	Pro	Ser	Ala
			420					425					430	Ala
Met	Ser	Trp	Gln	Asp	Gly	Arg	Val	Tyr	Phe	Phe	Lys	Gly	Lys	Val
	435						440					445		Tyr
Trp	Arg	Leu	Asn	Gln	Gln	Leu	Arg	Val	Glu	Lys	Gly	Tyr	Pro	Arg
	450					455					460			Asn
Ile	Ser	His	Asn	Trp	Met	His	Cys	Arg	Pro	Arg	Thr	Ile	Asp	Thr
465					470					475				Thr
Pro	Ser	Gly	Gly	Asn	Thr	Thr	Pro	Ser	Gly	Thr	Gly	Ile	Thr	Leu
				485					490					Asp
Thr	Thr	Leu	Ser	Ala	Thr	Glu	Thr	Thr	Phe	Glu	Tyr			
			500					505						

<210> 123  
 <211> 2639  
 <212> DNA  
 <213> Homo Sapiens

<220>  
 <221> CDS  
 <222> (148)...(2055)

<400> 123

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 agcgggtggc cccgcgtgc gcccgccctc gcctcacctg gcgcaggtgg acacctgccg 120  
 aggtgtgtgc cctccggccc ctgaagc atg gcc agc agc ggc atg gct gac agc 174  
 Met Ala Ser Ser Gly Met Ala Asp Ser

1 5

gcc aac cac ctg ccc ttc ttt ttc ggc aac atc acc cgg gag gag gca 222  
 Ala Asn His Leu Pro Phe Phe Phe Gly Asn Ile Thr Arg Glu Glu Ala  
 10 15 20 25

gaa gat tac ctg gtc cag ggg ggc atg agt gat ggg ctt tat ttg ctg 270  
 Glu Asp Tyr Leu Val Gln Gly Gly Met Ser Asp Gly Leu Tyr Leu Leu  
 30 35 40

cgc cag agc cgc aac tac ctg ggt ggc ttc gcc ctg tcc gtg gcc cac 318  
 Arg Gln Ser Arg Asn Tyr Leu Gly Phe Ala Leu Ser Val Ala His  
 45 50 55

ggg agg aag gca cac cac tac acc atc gag cgg gag ctg aat ggc acc 366  
 Gly Arg Lys Ala His His Tyr Thr Ile Glu Arg Glu Leu Asn Gly Thr  
 60 65 70

tac gcc atc gcc ggt ggc agg acc cat gcc agc ccc gcc gac ctc tgc 414  
 Tyr Ala Ile Ala Gly Gly Arg Thr His Ala Ser Pro Ala Asp Leu Cys  
 75 80 85

cac tac cac tcc cag gag tct gat ggc ctg gtc tgc ctc ctc aag aag 462  
 His Tyr His Ser Gln Glu Ser Asp Gly Leu Val Cys Leu Leu Lys Lys  
 90 95 100 105

ccc ttc aac cgg ccc caa ggg gtg cag ccc aag act ggg ccc ttt gag 510  
 Pro Phe Asn Arg Pro Gln Gly Val Gln Pro Lys Thr Gly Pro Phe Glu  
 110 115 120

gat ttg aag gaa aac ctc atc agg gaa tat gtg aag cag aca tgg aac 558  
 Asp Leu Lys Glu Asn Leu Ile Arg Glu Tyr Val Lys Gln Thr Trp Asn  
 125 130 135

ctg cag ggt cag gct ctg gag cag gcc atc atc agt cag aag cct cag 606  
 Leu Gln Gly Gln Ala Leu Glu Gln Ala Ile Ile Ser Gln Lys Pro Gln  
 140 145 150

ctg gag aag ctg atc gct acc aca gcc cat gaa aaa atg cct tgg ttc 654  
 Leu Glu Lys Leu Ile Ala Thr Thr Ala His Glu Lys Met Pro Trp Phe  
 155 160 165

cat gga aaa atc tct cgg gaa gaa tct gag caa att gtc ctg ata gga 702  
 His Gly Lys Ile Ser Arg Glu Glu Ser Glu Gln Ile Val Leu Ile Gly  
 170 175 180 185

tca aag aca aat gga aag ttc ctg atc cga gcc aga gac aac aac ggc 750  
 Ser Lys Thr Asn Gly Lys Phe Leu Ile Arg Ala Arg Asp Asn Asn Gly  
 190 195 200

tcc tac gcc ctg tgc ctg ctg cac gaa ggg aag gtg ctg cac tat cgc 798  
 Ser Tyr Ala Leu Cys Leu Leu His Glu Gly Lys Val Leu His Tyr Arg  
 205 210 215

atc gac aaa gac aag aca ggg aag ctc tcc atc ccc gag gga aag aag	846
Ile Asp Lys Asp Lys Thr Gly Lys Leu Ser Ile Pro Glu Gly Lys Lys	
220 225 230	
ttc gac acg ctc tgg cag cta gtc gag cat tat tct tat aaa gca gat	894
Phe Asp Thr Leu Trp Gln Leu Val Glu His Tyr Ser Tyr Lys Ala Asp	
235 240 245	
ggc ttg tta aga gtt ctt act gtc cca tgt caa aaa atc ggc aca cag	942
Gly Leu Leu Arg Val Leu Thr Val Pro Cys Gln Lys Ile Gly Thr Gln	
250 255 260 265	
gga aat gtt aat ttt gga ggc cgt cca caa ctt cca ggt tcc cat cct	990
Gly Asn Val Asn Phe Gly Gly Arg Pro Gln Leu Pro Gly Ser His Pro	
270 275 280	
gcg act tgg tca gcg ggt gga ata atc tca aga atc aaa tca tac tcc	1038
Ala Thr Trp Ser Ala Gly Gly Ile Ile Ser Arg Ile Lys Ser Tyr Ser	
285 290 295	
ttc cca aag cct ggc cac aga aag tcc tcc cct gcc caa ggg aac cg	1086
Phe Pro Lys Pro Gly His Arg Lys Ser Ser Pro Ala Gln Gly Asn Arg	
300 305 310	
caa gag agt act gtg tca ttc aat ccg tat gag cca gaa ctt gca ccc	1134
Gln Glu Ser Thr Val Ser Phe Asn Pro Tyr Glu Pro Glu Leu Ala Pro	
315 320 325	
tgg gct gca gac aaa ggc ccc cag aga gaa gcc cta ccc atg gac aca	1182
Trp Ala Ala Asp Lys Gly Pro Gln Arg Glu Ala Leu Pro Met Asp Thr	
330 335 340 345	
gag gtg tac gag agc ccc tac gcg gac ccc gag gag atc agg ccc aag	1230
Glu Val Tyr Glu Ser Pro Tyr Ala Asp Pro Glu Glu Ile Arg Pro Lys	
350 355 360	
gag gtt tac ctg gac cga aag ctg ctg acg ctg gaa gac aaa gaa ctg	1278
Glu Val Tyr Leu Asp Arg Lys Leu Leu Thr Leu Glu Asp Lys Glu Leu	
365 370 375	
ggc tct ggt aat ttt gga act gtg aaa aag ggc tac tac caa atg aaa	1326
Gly Ser Gly Asn Phe Gly Thr Val Lys Lys Gly Tyr Tyr Gln Met Lys	
380 385 390	
aaa gtt gtg aaa acc gtg gct gtg aaa ata ctg aaa aac gag gcc aat	1374
Lys Val Val Lys Thr Val Ala Val Lys Ile Leu Lys Asn Glu Ala Asn	
395 400 405	
gac ccc gct ctt aaa gat gag tta tta gca gaa gca aat gtc atg cag	1422
Asp Pro Ala Leu Lys Asp Glu Leu Leu Ala Glu Ala Asn Val Met Gln	
410 415 420 425	
cag ctg gac aac ccg tac atc gtg cgg atg atc ggg ata tgc gag gcc	1470
Gln Leu Asp Asn Pro Tyr Ile Val Arg Met Ile Gly Ile Cys Glu Ala	
430 435 440	
gag tcc tgg atg ctg gtt atg gag atg gca gaa ctt ggt ccc ctc aat	1518
Glu Ser Trp Met Leu Val Met Glu Met Ala Glu Leu Gly Pro Leu Asn	
445 450 455	
aag tat ttg cag cag aac aga cat gtc aag gat aag aac atc ata gaa	1566

Lys	Tyr	Leu	Gln	Gln	Asn	Arg	His	Val	Lys	Asp	Lys	Asn	Ile	Ile	Glu		
		460					465					470					
ctg	gtt	cat	cag	gtt	tcc	atg	ggc	atg	aag	tac	ttg	gag	gag	agc	aat	1614	
Leu	Val	His	Gln	Val	Ser	Met	Gly	Met	Lys	Tyr	Leu	Glu	Glu	Ser	Asn		
		475				480					485						
ttt	gtg	cac	aga	gat	ctg	gct	gca	aga	aat	gtg	ttg	cta	gtt	acc	caa	1662	
Phe	Val	His	Arg	Asp	Leu	Ala	Ala	Arg	Asn	Val	Leu	Leu	Val	Thr	Gln		
490					495				500						505		
cat	tac	gcc	aag	atc	agt	gat	ttc	gga	ctt	tcc	aaa	gca	ctg	cgt	gct	1710	
His	Tyr	Ala	Lys	Ile	Ser	Asp	Phe	Gly	Leu	Ser	Lys	Ala	Leu	Arg	Ala		
				510					515					520			
gat	gaa	aac	tac	tac	aag	gcc	cag	acc	cat	gga	aag	tgg	cct	gtc	aag	1758	
Asp	Glu	Asn	Tyr	Tyr	Lys	Ala	Gln	Thr	His	Gly	Lys	Trp	Pro	Val	Lys		
			525					530					535				
tgg	tac	gct	ccg	gaa	tgc	atc	aac	tac	tac	aag	ttc	tcc	agc	aaa	agc	1806	
Trp	Tyr	Ala	Pro	Glu	Cys	Ile	Asn	Tyr	Tyr	Lys	Phe	Ser	Ser	Lys	Ser		
		540					545					550					
gat	gtc	tgg	agc	ttt	gga	gtg	ttg	atg	tgg	gaa	gca	ttc	tcc	tat	ggg	1854	
Asp	Val	Trp	Ser	Phe	Gly	Val	Leu	Met	Trp	Glu	Ala	Phe	Ser	Tyr	Gly		
		555				560					565						
cag	aag	cca	tat	cga	ggg	atg	aaa	gga	agt	gaa	gtc	acc	gct	atg	tta	1902	
Gln	Lys	Pro	Tyr	Arg	Gly	Met	Lys	Gly	Ser	Glu	Val	Thr	Ala	Met	Leu		
570					575				580						585		
gag	aaa	gga	gag	cgg	atg	ggg	tgc	cct	gca	ggg	tgt	cca	aga	gag	atg	1950	
Glu	Lys	Gly	Glu	Arg	Met	Gly	Cys	Pro	Ala	Gly	Cys	Pro	Arg	Glu	Met		
				590					595					600			
tac	gat	ctc	atg	aat	ctg	tgc	tgg	aca	tac	gat	gtg	gaa	aac	agg	ccc	1998	
Tyr	Asp	Leu	Met	Asn	Leu	Cys	Trp	Thr	Tyr	Asp	Val	Glu	Asn	Arg	Pro		
			605					610					615				
gga	ttc	gca	gca	gtg	gaa	ctg	cgg	ctg	cgc	aat	tac	tac	tat	gac	gtg	2046	
Gly	Phe	Ala	Ala	Val	Glu	Leu	Arg	Leu	Arg	Asn	Tyr	Tyr	Tyr	Asp	Val		
		620					625					630					
gtg	aac	taa	ccgctccccgc	acctgtcggg	ggctgccttt	gatcacagga										2095	
Val	Asn	*															
		635															
gcaatcacag	gaaaatgtat	ccagaggaat	tgattgtcag	ccacctccct	ctgccagtcg	2155											
ggagagccag	gcttggatgg	aacatgccca	caacttgtca	cccaaagcct	gtcccaggac	2215											
tcaccctcca	caaagcaaag	gcagtccccg	gagaaaagac	ggatggcagg	atccaagggg	2275											
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tgttttccaaa	tccctttcat	gtctttccac	ttctctgggt	cccgggggtgc	atttgttact	2395											
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caca						2639											

<210> 124  
 <211> 635  
 <212> PRT  
 <213> Homo Sapiens

<400> 124

Met	Ala	Ser	Ser	Gly	Met	Ala	Asp	Ser	Ala	Asn	His	Leu	Pro	Phe	Phe
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Phe	Gly	Asn	Ile	Thr	Arg	Glu	Glu	Ala	Glu	Asp	Tyr	Leu	Val	Gln	Gly
			20					25					30		
Gly	Met	Ser	Asp	Gly	Leu	Tyr	Leu	Leu	Arg	Gln	Ser	Arg	Asn	Tyr	Leu
		35					40					45			
Gly	Gly	Phe	Ala	Leu	Ser	Val	Ala	His	Gly	Arg	Lys	Ala	His	His	Tyr
	50					55					60				
Thr	Ile	Glu	Arg	Glu	Leu	Asn	Gly	Thr	Tyr	Ala	Ile	Ala	Gly	Gly	Arg
65					70					75					80
Thr	His	Ala	Ser	Pro	Ala	Asp	Leu	Cys	His	Tyr	His	Ser	Gln	Glu	Ser
				85					90					95	
Asp	Gly	Leu	Val	Cys	Leu	Leu	Lys	Lys	Pro	Phe	Asn	Arg	Pro	Gln	Gly
			100					105					110		
Val	Gln	Pro	Lys	Thr	Gly	Pro	Phe	Glu	Asp	Leu	Lys	Glu	Asn	Leu	Ile
		115					120					125			
Arg	Glu	Tyr	Val	Lys	Gln	Thr	Trp	Asn	Leu	Gln	Gly	Gln	Ala	Leu	Glu
	130					135					140				
Gln	Ala	Ile	Ile	Ser	Gln	Lys	Pro	Gln	Leu	Glu	Lys	Leu	Ile	Ala	Thr
145					150					155					160
Thr	Ala	His	Glu	Lys	Met	Pro	Trp	Phe	His	Gly	Lys	Ile	Ser	Arg	Glu
				165					170					175	
Glu	Ser	Glu	Gln	Ile	Val	Leu	Ile	Gly	Ser	Lys	Thr	Asn	Gly	Lys	Phe
			180					185					190		
Leu	Ile	Arg	Ala	Arg	Asp	Asn	Asn	Gly	Ser	Tyr	Ala	Leu	Cys	Leu	Leu
		195				200					205				
His	Glu	Gly	Lys	Val	Leu	His	Tyr	Arg	Ile	Asp	Lys	Asp	Lys	Thr	Gly
	210					215					220				
Lys	Leu	Ser	Ile	Pro	Glu	Gly	Lys	Lys	Phe	Asp	Thr	Leu	Trp	Gln	Leu
225					230					235					240
Val	Glu	His	Tyr	Ser	Tyr	Lys	Ala	Asp	Gly	Leu	Leu	Arg	Val	Leu	Thr
				245					250					255	
Val	Pro	Cys	Gln	Lys	Ile	Gly	Thr	Gln	Gly	Asn	Val	Asn	Phe	Gly	Gly
			260					265					270		
Arg	Pro	Gln	Leu	Pro	Gly	Ser	His	Pro	Ala	Thr	Trp	Ser	Ala	Gly	Gly
		275					280					285			
Ile	Ile	Ser	Arg	Ile	Lys	Ser	Tyr	Ser	Phe	Pro	Lys	Pro	Gly	His	Arg
	290					295					300				
Lys	Ser	Ser	Pro	Ala	Gln	Gly	Asn	Arg	Gln	Glu	Ser	Thr	Val	Ser	Phe
305					310					315					320
Asn	Pro	Tyr	Glu	Pro	Glu	Leu	Ala	Pro	Trp	Ala	Ala	Asp	Lys	Gly	Pro
				325					330					335	
Gln	Arg	Glu	Ala	Leu	Pro	Met	Asp	Thr	Glu	Val	Tyr	Glu	Ser	Pro	Tyr
			340					345					350		
Ala	Asp	Pro	Glu	Glu	Ile	Arg	Pro	Lys	Glu	Val	Tyr	Leu	Asp	Arg	Lys
		355					360					365			
Leu	Leu	Thr	Leu	Glu	Asp	Lys	Glu	Leu	Gly	Ser	Gly	Asn	Phe	Gly	Thr
		370				375					380				
Val	Lys	Lys	Gly	Tyr	Tyr	Gln	Met	Lys	Lys	Val	Val	Lys	Thr	Val	Ala
385					390					395					400
Val	Lys	Ile	Leu	Lys	Asn	Glu	Ala	Asn	Asp	Pro	Ala	Leu	Lys	Asp	Glu
				405					410					415	
Leu	Leu	Ala	Glu	Ala	Asn	Val	Met	Gln	Gln	Leu	Asp	Asn	Pro	Tyr	Ile
			420					425					430		
Val	Arg	Met	Ile	Gly	Ile	Cys	Glu	Ala	Glu	Ser	Trp	Met	Leu	Val	Met
		435					440					445			
Glu	Met	Ala	Glu	Leu	Gly	Pro	Leu	Asn	Lys	Tyr	Leu	Gln	Gln	Asn	Arg
		450				455					460				
His	Val	Lys	Asp	Lys	Asn	Ile	Ile	Glu	Leu	Val	His	Gln	Val	Ser	Met
465					470					475					480

Gly	Met	Lys	Tyr	Leu	Glu	Glu	Ser	Asn	Phe	Val	His	Arg	Asp	Leu	Ala	
				485					490					495		
Ala	Arg	Asn	Val	Leu	Leu	Val	Thr	Gln	His	Tyr	Ala	Lys	Ile	Ser	Asp	
			500					505					510			
Phe	Gly	Leu	Ser	Lys	Ala	Leu	Arg	Ala	Asp	Glu	Asn	Tyr	Tyr	Lys	Ala	
		515					520					525				
Gln	Thr	His	Gly	Lys	Trp	Pro	Val	Lys	Trp	Tyr	Ala	Pro	Glu	Cys	Ile	
	530					535					540					
Asn	Tyr	Tyr	Lys	Phe	Ser	Ser	Lys	Ser	Asp	Val	Trp	Ser	Phe	Gly	Val	
545					550					555					560	
Leu	Met	Trp	Glu	Ala	Phe	Ser	Tyr	Gly	Gln	Lys	Pro	Tyr	Arg	Gly	Met	
				565					570					575		
Lys	Gly	Ser	Glu	Val	Thr	Ala	Met	Leu	Glu	Lys	Gly	Glu	Arg	Met	Gly	
			580					585					590			
Cys	Pro	Ala	Gly	Cys	Pro	Arg	Glu	Met	Tyr	Asp	Leu	Met	Asn	Leu	Cys	
		595					600					605				
Trp	Thr	Tyr	Asp	Val	Glu	Asn	Arg	Pro	Gly	Phe	Ala	Ala	Val	Glu	Leu	
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Arg	Leu	Arg	Asn	Tyr	Tyr	Tyr	Asp	Val	Val	Asn						
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 cagcctggga ggggccacac cctgaccatc cccctttatc ccttctgaga tgtttgtag 180  
 gaagtctggg tccaggggat atcatttctt gttccatcc atg cag ggg ttg ctt 234  
 Met Gln Gly Leu Leu  
 1 5

acc tcg ggt agg aaa ccc tca ggc ggt ggc agg tgc aca ggt agg gga 282  
 Thr Ser Gly Arg Lys Pro Ser Gly Gly Gly Arg Cys Thr Gly Arg Gly  
 10 15 20

gga tgg aga ggg cag tgg tgc ctg aag ccc tgg atg ggc gga gct gac 330  
 Gly Trp Arg Gly Gln Trp Cys Leu Lys Pro Trp Met Gly Gly Ala Asp  
 25 30 35

ccc cca aca cca act cta tca tgc ctg ctc ctc cct gtc ccc cca gag 378  
 Pro Pro Thr Pro Thr Leu Ser Cys Leu Leu Leu Pro Val Pro Pro Glu  
 40 45 50

ctg cct gat cat tgc tac aga atg aac tct agc cca gct ggg acc cca 426  
 Leu Pro Asp His Cys Tyr Arg Met Asn Ser Ser Pro Ala Gly Thr Pro  
 55 60 65

agt cca cag ccc tcc agg gcc aat ggg aac atc aac ctg ggg cct tca 474  
 Ser Pro Gln Pro Ser Arg Ala Asn Gly Asn Ile Asn Leu Gly Pro Ser  
 70 75 80 85

gcc aac cca aat gcc cag ccc acg gac ttc gac ttc ctc aaa gtc atc 522  
 Ala Asn Pro Asn Ala Gln Pro Thr Asp Phe Asp Phe Leu Lys Val Ile  
 90 95 100

ggc aaa ggg aac tac ggg aag gtc cta ctg gcc aag cgc aag tct gat	570
Gly Lys Gly Asn Tyr Gly Lys Val Leu Leu Ala Lys Arg Lys Ser Asp	
105 110 115	
ggg gcg ttc tat gca gtg aag gta cta cag aaa aag tcc atc tta aag	618
Gly Ala Phe Tyr Ala Val Lys Val Leu Gln Lys Lys Ser Ile Leu Lys	
120 125 130	
aag aaa gag cag agc cac atc atg gca gag cgc agt gtg ctt ctg aag	666
Lys Lys Glu Gln Ser His Ile Met Ala Glu Arg Ser Val Leu Leu Lys	
135 140 145	
aac gtg cgg cac ccc ttc ctc gtg ggc ctg cgc tac tcc ttc cag aca	714
Asn Val Arg His Pro Phe Leu Val Gly Leu Arg Tyr Ser Phe Gln Thr	
150 155 160 165	
cct gag aag ctc tac ttc gtg ctc gac tat gtc aac ggg gga gag ctc	762
Pro Glu Lys Leu Tyr Phe Val Leu Asp Tyr Val Asn Gly Gly Glu Leu	
170 175 180	
ttc ttc cac ctg cag cgg gag cgc cgg ttc ctg gag ccc cgg gcc agg	810
Phe Phe His Leu Gln Arg Glu Arg Arg Phe Leu Glu Pro Arg Ala Arg	
185 190 195	
ttc tac gct gct gag gtg gcc agc gcc att ggc tac ctg cac tcc ctc	858
Phe Tyr Ala Ala Glu Val Ala Ser Ala Ile Gly Tyr Leu His Ser Leu	
200 205 210	
aac atc att tac agg gat ctg aaa cca gag aac att ctc ttg gac tgc	906
Asn Ile Ile Tyr Arg Asp Leu Lys Pro Glu Asn Ile Leu Leu Asp Cys	
215 220 225	
cag gga cac gtg gtg ctg acg gat ttt ggc ctc tgc aag gaa ggt gta	954
Gln Gly His Val Val Leu Thr Asp Phe Gly Leu Cys Lys Glu Gly Val	
230 235 240 245	
gag cct gaa gac acc aca tcc aca ttc tgt ggt acc cct gag tac ttg	1002
Glu Pro Glu Asp Thr Ser Thr Phe Cys Gly Thr Pro Glu Tyr Leu	
250 255 260	
gca cct gaa gtg ctt cgg aaa gag cct tat gat cga gca gtg gac tgg	1050
Ala Pro Glu Val Leu Arg Lys Glu Pro Tyr Asp Arg Ala Val Asp Trp	
265 270 275	
tgg tgc ttg ggg gca gtc ctc tac gag atg ctc cat ggc ctg ccg ccc	1098
Trp Cys Leu Gly Ala Val Leu Tyr Glu Met Leu His Gly Leu Pro Pro	
280 285 290	
ttc tac agc caa gat gta tcc cag atg tat gag aac att ctg cac cag	1146
Phe Tyr Ser Gln Asp Val Ser Gln Met Tyr Glu Asn Ile Leu His Gln	
295 300 305	
ccg cta cag atc ccc gga ggc cgg aca gtg gcc gcc tgt gac ctc ctg	1194
Pro Leu Gln Ile Pro Gly Gly Arg Thr Val Ala Ala Cys Asp Leu Leu	
310 315 320 325	
caa agc ctt ctc cac aag gac cag agg cag cgg ctg ggc tcc aaa gca	1242
Gln Ser Leu Leu His Lys Asp Gln Arg Gln Arg Leu Gly Ser Lys Ala	
330 335 340	
gac ttt ctt gag att aag aac cat gta ttc ttc agc ccc ata aac tgg	1290



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Asp Phe Leu Glu Ile Lys Asn His Val Phe Phe Ser Pro Ile Asn Trp
      345                                350                                355

gat gac ctg tac cac aag agg cta act cca ccc ttc aac cca aat gtg 1338
Asp Asp Leu Tyr His Lys Arg Leu Thr Pro Pro Phe Asn Pro Asn Val
      360                                365                                370

aca gga cct gct gac ttg aag cat ttt gac cca gag ttc acc cag gaa 1386
Thr Gly Pro Ala Asp Leu Lys His Phe Asp Pro Glu Phe Thr Gln Glu
      375                                380                                385

gct gtg tcc aag tcc att ggc tgt acc cct gac act gtg gcc agc agc 1434
Ala Val Ser Lys Ser Ile Gly Cys Thr Pro Asp Thr Val Ala Ser Ser
      390                                395                                400                                405

tct ggg gcc tca agt gca ttc ctg gga ttt tct tat gcg cca gag gat 1482
Ser Gly Ala Ser Ser Ala Phe Leu Gly Phe Ser Tyr Ala Pro Glu Asp
      410                                415                                420

gat gac atc ttg gat tgc tag aagagaagga cctgtgaaac tactgaggcc 1533
Asp Asp Ile Leu Asp Cys *
      425

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agctggtatt agtaaggaat taccttcagc tgctaggaag agcgactcaa actaacaatg 1593
gcttcaacga gaagcaggtt tattttttcc agcacataaa agaaaaataa tgtttcggag 1653
tccaggactg gcaggacagg tcatcagata ctcagaggct gtatctctgc cctgccaaacc 1713
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tattttgtgt ttaggggaagg gaaaatggag gaaagggggag aagagcaaag ggcgctttta 1833
aagagctttc ccaaaagctc cccccaatga cttttgcttc catctcacta accaccacc 1893
cctacctgga atggaggctg ggaaatgtgg cttatttgct ggggtacgtga ctatccctaa 1953
taacaaaggg gttttgaccc taagacatta ggggagaatg ttgggtaggc agccagccct 2013
cttttaccat agggcctcct ggtgtttgga ttttgatctc aatgtgtaaa atgacagaga 2073
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aaaaaaaaaa aaa 2146

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<210> 126  
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 <212> PRT  
 <213> Homo Sapiens

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<400> 126
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Cys Thr Gly Arg Gly Gly Trp Arg Gly Gln Trp Cys Leu Lys Pro Trp
      20          25          30
Met Gly Gly Ala Asp Pro Pro Thr Pro Thr Leu Ser Cys Leu Leu Leu
      35          40          45
Pro Val Pro Pro Glu Leu Pro Asp His Cys Tyr Arg Met Asn Ser Ser
      50          55          60
Pro Ala Gly Thr Pro Ser Pro Gln Pro Ser Arg Ala Asn Gly Asn Ile
      65          70          75          80
Asn Leu Gly Pro Ser Ala Asn Pro Asn Ala Gln Pro Thr Asp Phe Asp
      85          90          95
Phe Leu Lys Val Ile Gly Lys Gly Asn Tyr Gly Lys Val Leu Leu Ala
      100         105         110
Lys Arg Lys Ser Asp Gly Ala Phe Tyr Ala Val Lys Val Leu Gln Lys
      115         120         125
Lys Ser Ile Leu Lys Lys Lys Glu Gln Ser His Ile Met Ala Glu Arg
      130         135         140
Ser Val Leu Leu Lys Asn Val Arg His Pro Phe Leu Val Gly Leu Arg
      145         150         155         160
Tyr Ser Phe Gln Thr Pro Glu Lys Leu Tyr Phe Val Leu Asp Tyr Val

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Val	Val	Leu	Glu	Asp	Leu	Ser	Pro	Leu	Glu	Ala	Arg	Val	Thr	Arg	Ile		
	25					30					35						
ttc	ctg	gtg	gtg	gtc	tac	agc	atc	gtc	tgc	ttc	ctc	ggg	att	ctg	ggc	678	
Phe	Leu	Val	Val	Val	Tyr	Ser	Ile	Val	Cys	Phe	Leu	Gly	Ile	Leu	Gly		
40					45				50						55		
aat	ggt	ctg	gtg	atc	atc	att	gcc	acc	ttc	aag	atg	aag	aag	aca	gtg	726	
Asn	Gly	Leu	Val	Ile	Ile	Ile	Ala	Thr	Phe	Lys	Met	Lys	Lys	Thr	Val		
				60					65					70			
aac	atg	gtc	tgg	ttc	ctc	aac	ctg	gca	gtg	gca	gat	ttc	ctg	ttc	aac	774	
Asn	Met	Val	Trp	Phe	Leu	Asn	Leu	Ala	Val	Ala	Asp	Phe	Leu	Phe	Asn		
			75					80						85			
gtc	ttc	ctc	cca	atc	cat	atc	acc	tat	gcc	gcc	atg	gac	tac	cac	tgg	822	
Val	Phe	Leu	Pro	Ile	His	Ile	Thr	Tyr	Ala	Ala	Met	Asp	Tyr	His	Trp		
			90					95					100				
gtt	ttc	ggg	aca	gcc	atg	tgc	aag	atc	agc	aac	ttc	ctt	ctc	atc	cac	870	
Val	Phe	Gly	Thr	Ala	Met	Cys	Lys	Ile	Ser	Asn	Phe	Leu	Leu	Ile	His		
105						110					115						
aac	atg	ttc	acc	agc	gtc	ttc	ctg	ctg	acc	atc	atc	agc	tct	gac	cgc	918	
Asn	Met	Phe	Thr	Ser	Val	Phe	Leu	Leu	Thr	Ile	Ile	Ser	Ser	Asp	Arg		
120					125					130					135		
tgc	atc	tct	gtg	ctc	ctc	cct	gtc	tgg	tcc	cag	aac	cac	cgc	agc	gtt	966	
Cys	Ile	Ser	Val	Leu	Leu	Pro	Val	Trp	Ser	Gln	Asn	His	Arg	Ser	Val		
				140				145						150			
cgc	ctg	gct	tac	atg	gcc	tgc	atg	gtc	atc	tgg	gtc	ctg	gct	ttc	ttc	1014	
Arg	Leu	Ala	Tyr	Met	Ala	Cys	Met	Val	Ile	Trp	Val	Leu	Ala	Phe	Phe		
			155					160						165			
ttg	agt	tcc	cca	tct	ctc	gtc	ttc	cgg	gac	aca	gcc	aac	ctg	cat	ggg	1062	
Leu	Ser	Ser	Pro	Ser	Leu	Val	Phe	Arg	Asp	Thr	Ala	Asn	Leu	His	Gly		
			170				175						180				
aaa	ata	tcc	tgc	ttc	aac	aac	ttc	agc	ctg	tcc	aca	cct	ggg	tct	tcc	1110	
Lys	Ile	Ser	Cys	Phe	Asn	Asn	Phe	Ser	Leu	Ser	Thr	Pro	Gly	Ser	Ser		
185						190					195						
tcg	tgg	ccc	act	cac	tcc	caa	atg	gac	cct	gtg	ggg	tat	agc	cgg	cac	1158	
Ser	Trp	Pro	Thr	His	Ser	Gln	Met	Asp	Pro	Val	Gly	Tyr	Ser	Arg	His		
200					205					210					215		
atg	gtg	gtg	act	gtc	acc	cgc	ttc	ctc	tgt	ggc	ttc	ctg	gtc	cca	gtc	1206	
Met	Val	Val	Thr	Val	Thr	Arg	Phe	Leu	Cys	Gly	Phe	Leu	Val	Pro	Val		
				220					225					230			
ctc	atc	atc	aca	gct	tgc	tac	ctc	acc	atc	gtg	tgc	aaa	ctg	cag	cgc	1254	
Leu	Ile	Ile	Thr	Ala	Cys	Tyr	Leu	Thr	Ile	Val	Cys	Lys	Leu	Gln	Arg		
			235					240						245			
aac	cgc	ctg	gcc	aag	acc	aag	aag	ccc	ttc	aag	att	att	gtg	acc	atc	1302	
Asn	Arg	Leu	Ala	Lys	Thr	Lys	Lys	Pro	Phe	Lys	Ile	Ile	Val	Thr	Ile		
			250				255						260				
atc	att	acc	ttc	ttc	ctc	tgc	tgg	tgc	ccc	tac	cac	aca	ctc	aac	ctc	1350	
Ile	Ile	Thr	Phe	Phe	Leu	Cys	Trp	Cys	Pro	Tyr	His	Thr	Leu	Asn	Leu		
			265			270					275						

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cta gag ctc cac cac act gcc atg cct ggc tct gtc ttc agc ctg ggt 1398
Leu Glu Leu His His Thr Ala Met Pro Gly Ser Val Phe Ser Leu Gly
280 285 290 295

ttg ccc ctg gcc act gcc ctt gcc att gcc aac agc tgc atg aac ccc 1446
Leu Pro Leu Ala Thr Ala Leu Ala Ile Ala Asn Ser Cys Met Asn Pro
300 305 310

att ctg tat gtt ttc atg ggt cag gac ttc aag aag ttc aag gtg gcc 1494
Ile Leu Tyr Val Phe Met Gly Gln Asp Phe Lys Lys Phe Lys Val Ala
315 320 325

ctc ttc tct cgc ctg gtc aat gct cta agt gaa gat aca ggc cac tct 1542
Leu Phe Ser Arg Leu Val Asn Ala Leu Ser Glu Asp Thr Gly His Ser
330 335 340

tcc tac ccc agc cat aga agc ttt acc aag atg tca tca atg aat gag 1590
Ser Tyr Pro Ser His Arg Ser Phe Thr Lys Met Ser Ser Met Asn Glu
345 350 355

agg act tct atg aat gag agg gag acc ggc atg ctt tga tcctcactgt 1639
Arg Thr Ser Met Asn Glu Arg Glu Thr Gly Met Leu *
360 365 370

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aaggcaagaa cctcttttagc atccaccaat tttcactgca ttttgcatgg gatgaacagt 1759
gttttatgct gggaatctag ggccctggaac ccctttcttc tagtggacag aacatgctgt 1819
gttccataca gccttggact agcaatttat gcttcttggg aggccagcct tgactgactc 1879
aaagcaaaaa aggaagaatt c 1900

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<210> 128  
 <211> 371  
 <212> PRT  
 <213> Homo Sapiens

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Pro Asp Tyr Leu Asp Ser Ile Val Val Leu Glu Asp Leu Ser Pro Leu
20 25 30
Glu Ala Arg Val Thr Arg Ile Phe Leu Val Val Val Tyr Ser Ile Val
35 40 45
Cys Phe Leu Gly Ile Leu Gly Asn Gly Leu Val Ile Ile Ile Ala Thr
50 55 60
Phe Lys Met Lys Lys Thr Val Asn Met Val Trp Phe Leu Asn Leu Ala
65 70 75 80
Val Ala Asp Phe Leu Phe Asn Val Phe Leu Pro Ile His Ile Thr Tyr
85 90 95
Ala Ala Met Asp Tyr His Trp Val Phe Gly Thr Ala Met Cys Lys Ile
100 105 110
Ser Asn Phe Leu Leu Ile His Asn Met Phe Thr Ser Val Phe Leu Leu
115 120 125
Thr Ile Ile Ser Ser Asp Arg Cys Ile Ser Val Leu Leu Pro Val Trp
130 135 140
Ser Gln Asn His Arg Ser Val Arg Leu Ala Tyr Met Ala Cys Met Val
145 150 155 160
Ile Trp Val Leu Ala Phe Phe Leu Ser Ser Pro Ser Leu Val Phe Arg
165 170 175
Asp Thr Ala Asn Leu His Gly Lys Ile Ser Cys Phe Asn Asn Phe Ser
180 185 190
Leu Ser Thr Pro Gly Ser Ser Ser Trp Pro Thr His Ser Gln Met Asp

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Pro	Val	195	Gly	Tyr	Ser	Arg	His	200	Met	Val	Val	Thr	Val	205	Thr	Arg	Phe	Leu
	210						215						220					
Cys	Gly	Phe	Leu	Val	Pro	Val	Leu	Ile	Ile	Thr	Ala	Cys	Tyr	Leu	Thr			
225					230					235					240			
Ile	Val	Cys	Lys	Leu	Gln	Arg	Asn	Arg	Leu	Ala	Lys	Thr	Lys	Lys	Pro			
			245						250					255				
Phe	Lys	Ile	Ile	Val	Thr	Ile	Ile	Ile	Thr	Phe	Phe	Leu	Cys	Trp	Cys			
		260						265					270					
Pro	Tyr	His	Thr	Leu	Asn	Leu	Leu	Glu	Leu	His	His	Thr	Ala	Met	Pro			
	275						280					285						
Gly	Ser	Val	Phe	Ser	Leu	Gly	Leu	Pro	Leu	Ala	Thr	Ala	Leu	Ala	Ile			
	290					295					300							
Ala	Asn	Ser	Cys	Met	Asn	Pro	Ile	Leu	Tyr	Val	Phe	Met	Gly	Gln	Asp			
305					310					315					320			
Phe	Lys	Lys	Phe	Lys	Val	Ala	Leu	Phe	Ser	Arg	Leu	Val	Asn	Ala	Leu			
			325						330					335				
Ser	Glu	Asp	Thr	Gly	His	Ser	Ser	Tyr	Pro	Ser	His	Arg	Ser	Phe	Thr			
		340						345				350						
Lys	Met	Ser	Ser	Met	Asn	Glu	Arg	Thr	Ser	Met	Asn	Glu	Arg	Glu	Thr			
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Gly	Met	Leu																
	370																	

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 <212> DNA  
 <213> Homo Sapiens

<220>  
 <221> CDS  
 <222> (42)...(1028)

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 Leu Met Lys Val Phe Val Thr Arg Arg Ile Pro Ala Glu Gly Arg Val  
 10 15 20

gcg ctc gcc cgg gcg gca gac tgt gag gtg gag cag tgg gac tcg gat 152  
 Ala Leu Ala Arg Ala Ala Asp Cys Glu Val Glu Gln Trp Asp Ser Asp  
 25 30 35

gag ccc atc cct gcc aag gag cta gag cga ggt gtg gcg ggg gcc cac 200  
 Glu Pro Ile Pro Ala Lys Glu Leu Glu Arg Gly Val Ala Gly Ala His  
 40 45 50

ggc ctg ctc tgc ctc ctc tcc gac cac gtg gac aag agg atc ctg gat 248  
 Gly Leu Leu Cys Leu Leu Ser Asp His Val Asp Lys Arg Ile Leu Asp  
 55 60 65

gct gca ggg gcc aat ctc aaa gtc atc agc acc atg tct gtg ggc atc 296  
 Ala Ala Gly Ala Asn Leu Lys Val Ile Ser Thr Met Ser Val Gly Ile  
 70 75 80 85

gac cac ttg gct ttg gat gaa atc aag aag cgt ggg atc cga gtt ggc 344  
 Asp His Leu Ala Leu Asp Glu Ile Lys Lys Arg Gly Ile Arg Val Gly  
 90 95 100

tac acc cca gat gtc ctg aca gat acc acc gcc gaa ctc gca gtc tcc	392
Tyr Thr Pro Asp Val Leu Thr Asp Thr Thr Ala Glu Leu Ala Val Ser	
105 110 115	
ctg cta ctt acc acc tgc cgc cgg ttg ccg gag gcc atc gag gaa gtg	440
Leu Leu Leu Thr Thr Cys Arg Arg Leu Pro Glu Ala Ile Glu Glu Val	
120 125 130	
aag aat ggt ggc tgg acc tcg tgg aag ccc ctc tgg ctg tgt ggc tat	488
Lys Asn Gly Gly Trp Thr Ser Trp Lys Pro Leu Trp Leu Cys Gly Tyr	
135 140 145	
gga ctc acg cag agc act gtc ggc atc atc ggg ctg ggg cgc ata ggc	536
Gly Leu Thr Gln Ser Thr Val Gly Ile Ile Gly Leu Gly Arg Ile Gly	
150 155 160 165	
cag gcc att gct cgg cgt ctg aaa cca ttc ggt gtc cag aga ttt ctg	584
Gln Ala Ile Ala Arg Arg Leu Lys Pro Phe Gly Val Gln Arg Phe Leu	
170 175 180	
tac aca ggg cgc cag ccc agg cct gag gaa gca gca gaa ttc cag gca	632
Tyr Thr Gly Arg Gln Pro Arg Pro Glu Glu Ala Ala Glu Phe Gln Ala	
185 190 195	
gag ttt gtg tct acc cct gag ctg gct gcc caa tct gat ttc atc gtc	680
Glu Phe Val Ser Thr Pro Glu Leu Ala Ala Gln Ser Asp Phe Ile Val	
200 205 210	
gtg gcc tgc tcc tta aca cct gca acc gag gga ctc tgc aac aag gac	728
Val Ala Cys Ser Leu Thr Pro Ala Thr Glu Gly Leu Cys Asn Lys Asp	
215 220 225	
ttc ttc cag aag atg aag gaa aca gct gtg ttc atc aac atc agc agg	776
Phe Phe Gln Lys Met Lys Glu Thr Ala Val Phe Ile Asn Ile Ser Arg	
230 235 240 245	
ggc gac gtc gta aac cag gac gac ctg tac cag gcc ttg gcc agt ggt	824
Gly Asp Val Val Asn Gln Asp Asp Leu Tyr Gln Ala Leu Ala Ser Gly	
250 255 260	
aag att gca gct gct gga ctg gat gtg acg agc cca gaa cca ctg cct	872
Lys Ile Ala Ala Ala Gly Leu Asp Val Thr Ser Pro Glu Pro Leu Pro	
265 270 275	
aca aac cac cct ctc ctg acc ctg aag aac tgt gtg att ctg ccc cac	920
Thr Asn His Pro Leu Leu Thr Leu Lys Asn Cys Val Ile Leu Pro His	
280 285 290	
att ggc agt gcc acc cac aga acc cgc aac acc atg tcc ttg ttg gca	968
Ile Gly Ser Ala Thr His Arg Thr Arg Asn Thr Met Ser Leu Leu Ala	
295 300 305	
gct aac aac ttg ctg gct ggc ctg aga ggg gag ccg atg cct agt gaa	1016
Ala Asn Asn Leu Leu Ala Gly Leu Arg Gly Glu Pro Met Pro Ser Glu	
310 315 320 325	
ctc aag ctg tag ccaaacagta gagatggagg gccgggaagc aaaccgtgcc	1068
Leu Lys Leu *	

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 Val Ala Gly Ala His Gly Leu Leu Cys Leu Leu Ser Asp His Val Asp  
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 Lys Arg Ile Leu Asp Ala Ala Gly Ala Asn Leu Lys Val Ile Ser Thr  
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 Gly Ile Arg Val Gly Tyr Thr Pro Asp Val Leu Thr Asp Thr Thr Ala  
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 Ala Ile Glu Glu Val Lys Asn Gly Gly Trp Thr Ser Trp Lys Pro Leu  
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 Leu Gly Arg Ile Gly Gln Ala Ile Ala Arg Arg Leu Lys Pro Phe Gly  
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 Val Gln Arg Phe Leu Tyr Thr Gly Arg Gln Pro Arg Pro Glu Glu Ala  
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 Ser Asp Phe Ile Val Val Ala Cys Ser Leu Thr Pro Ala Thr Glu Gly  
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 Leu Cys Asn Lys Asp Phe Phe Gln Lys Met Lys Glu Thr Ala Val Phe  
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 Ala Leu Ala Ser Gly Lys Ile Ala Ala Ala Gly Leu Asp Val Thr Ser  
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 Pro Glu Pro Leu Pro Thr Asn His Pro Leu Leu Thr Leu Lys Asn Cys  
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 Val Ile Leu Pro His Ile Gly Ser Ala Thr His Arg Thr Arg Asn Thr  
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 Pro Met Pro Ser Glu Leu Lys Leu  
 325